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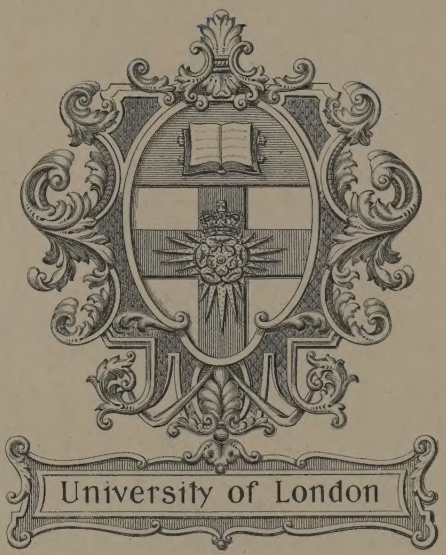

REPORTS

FROM

COMMISSIONERS:

NINETEEN VOLUMES.

—(13.)—

LUNACY (ENGLAND); LUNATIC ASYLUMS (IRELAND);
LUNACY (SCOTLAND); DUBLIN HOSPITALS;
LOAN FUND BOARD (IRELAND); ORDNANCE SURVEY.
Prisons (Scotland) Licensing System (Scotland)
Thames Embankment.

Session

5 February —— *6 August* 1861.

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VOL. XXVII.
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REPORTS FROM COMMISSIONERS:

1861.

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LUNATIC ASYLUMS—IRELAND.

THE

TENTH REPORT

ON THE

DISTRICT, CRIMINAL, AND PRIVATE LUNATIC ASYLUMS

IN IRELAND:

WITH APPENDICES.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEX. THOM & SONS, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1861.

2901

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TENTH REPORT

ON THE

DISTRICT, CRIMINAL, AND PRIVATE LUNATIC ASYLUMS

IN IRELAND.

TO HIS EXCELLENCY, GEORGE WILLIAM FREDERICK, EARL OF CARLISLE, K.G., LORD LIEUTENANT-GENERAL AND GENERAL GOVERNOR OF IRELAND.

MAY IT PLEASE YOUR EXCELLENCY,

INTRODUCTORY.

We have the honour to present to your Excellency our Tenth Report on the Lunatic Asylums of Ireland, and to state that the general condition of these institutions is satisfactory, various alterations having been effected in them since the date of our last Report.

The old buildings, erected thirty years ago, are gradually losing much of their original gloominess and prison-like appearance, while modern improvements, tending to the comfort, well-being, and efficient treatment of the patients in them, have been introduced, or are in process of being so. As in our preceding reports the necessity for these alterations and improvements has been brought under your Excellency's notice, and at the same time urged on the consideration of different local Boards, it would be but a simple repetition to refer again to them in detail. We may, however, assure your Excellency, that it has been our unceasing endeavour to ameliorate the condition of the insane classes in this country, whether located in public or private asylums; and in regard to the former, we feel bound to add that our suggestions and wishes have, for the most part, been cordially acceded to by local authorities. Every disposition to provide suitable accommodation for our lunatic poor is manifested by the gentry and community in general, now that they are satisfied of the utility thereof, and made acquainted, not alone with the extent to which insanity exists throughout the country, but with the social dangers and disadvantages that are likely to ensue unless active and prompt steps be taken to counteract its progress. In furtherance of this object during the two years just elapsed, we have not failed to express our conviction of the necessity of securing an ample accommodation for the insane poor, when bringing the subject under the notice of the Boards of Governors of District Asylums. We have also attended on Grand Juries for the purpose of placing before them the requirements of their different counties, as shown by statistical returns, as well as the advantages likely to be derived from the breaking up of large districts or those where two or three counties had but one asylum between them. In fact our object so far has been to establish the general principle, that where a county comprises a very extensive area, or contains a population bordering on 200,000, a separate asylum would prove the most advantageous. The greater expense to be incurred by the erection of a new institution as compared with that of enlarging an old one, and the consequent employment of a second staff, constituted, in the opinion of some parties, the main objection to this principle; it being agreed on all hands that additional accommodation of some kind was required, as at Carlow, Derry, Limerick, and elsewhere. Differences arose, however, as to whether it would be more advisable that fresh districts should be formed, or existing asylums enlarged. Your Excellency

DISTRICT LUNATIC ASYLUMS.

minutely inquired into the particulars of each case, and, on mature consideration, decided in favour of a separation in all, thus exercising the powers vested in the Lord Lieutenant by the 1st & 2nd George IV., cap. 33.

New Asylum Districts. (*Vide* App. F. Doc. pp. 57–60.)

Orders in Council have been accordingly issued for the erection of an asylum in Wexford county, detached from the Carlow district; for the erection of an asylum in Clare, for that county alone, detached from Limerick; for the erection of an asylum in Mayo, separated from Galway and Roscommon; for the erection of an asylum at Letterkenny for the county of Donegal, separated from Londonderry; and for the erection of an asylum at Monaghan for that county, separated from the Armagh district. The Grand Jury of the adjoining county of Cavan, detached also from Armagh, wishes to unite with Monaghan and to build in common an institution of suitable dimensions. As the two counties are small and contain between them a population of 280,000, the proposed arrangement, if sanctioned by your Excellency, cannot but prove fiscally advantageous to both, while in other respects there exists no serious objection to its being carried into effect.

Tipperary District. Asylum.

The very limited accommodation for the populous and extensive county of Tipperary has, for some years, been much felt in the district, and observed on by us both personally at the Local Board and in official reports. The asylum happens to be situated in the south-east corner of the district, and is available for 140 inmates only. We recommended the establishment of a second institution in the vicinity of Nenagh for the North Riding of the county. The Governors, however, as well as the Grand Juries of both ridings, advocated, on the score of economy, the formation of an auxiliary asylum at Clonmel, and memorialed your Excellency to permit the purchase of the old workhouse (at the time unoccupied) to be fitted up and appropriated for the reception of 160 patients. The necessary works are now in progress for the conversion of the premises to their intended object. It is doubtful, however, whether this project will prove as satisfactory to the county as was anticipated by its promoters, the Grand Jury of the North Riding already exhibiting a strong desire to have a distinct institution for their portion of the district. Should a necessity for further provision arise in the county Tipperary for its lunatic poor beyond that now preparing, as most probably will be the case, there can be no question but that it should be made in the vicinity of Nenagh.

Enlargement of old Asylums.

Independently of the general accommodation just referred to, and extending to nearly 1,600 additional beds, 4,500 being already available, alterations and certain enlargements are being or about to be effected in the district asylums at Waterford and Armagh, their Local Boards coinciding in the suggestions we submitted for their consideration. The asylums in Carlow and Londonderry stand in need, too, of various improvements, having been built at a time when the treatment of mental disease was not so well understood as at present: and though deficient in many points, it would be injudicious to commence any structural changes in them, in consequence of being over-crowded, and without available space even for temporary occupation, till a portion of their inmates will have been drafted off to new asylums.

Proposed Asylum for the County Down.

The question of detaching the County Down, with a population of 340,000, from Antrim, has been for some time a subject of much discussion by the Belfast Asylum Board and the Grand Juries of the two counties. In March last, a meeting composed of many of the most influential proprietors and gentry in the district was held in Belfast; when after hearing a statement from one of the Inspectors who specially attended, it appeared to be the unanimous opinion that additional premises were required for about 300 lunatics. The members of the Belfast Board of Governors and the deputations from the Grand Juries of Antrim and Carrickfergus voted on a division for the enlargement of the existing institution or the erection of one for incurable and chronic patients in proximity to it. The Down deputation was for an immediate separation. The matter at issue has not as yet been finally decided; but we anticipate, as in previous instances, that a division of the district will be deemed, under all circumstances, the most expedient.

Inadequacy of accommodation in the Richmond District.

We regret to say that notwithstanding the reduction in area of the metropolitan district, by the detachment of the County of Meath, and the extension of the Richmond Asylum itself, the number of unaccommodated pauper lunatics in it does not seem to be very materially diminished; an evil referrible in no small degree to the continuous influx of strangers into Dublin, among whom, no doubt, are many parties labouring under mental affections, and who are committed very frequently to prison as dangerous lunatics. In the city gaols there are at present no less than ninety insane of both sexes, independent of a still greater number diffused through the workhouses of the district, or at large and totally unprovided for. We apprehend the most feasible mode of meeting present and future wants, if the district be not divided, which its peculiar formation might render difficult, would be found in erecting an auxiliary asylum chargeable to Dublin, Louth, and Wicklow, on the confines of the last-named county.

There remain the three other districts, namely, those of Maryboro', Cork, and Mullingar, to which we shall make passing reference. The Asylum at Maryboro' for the King's and Queen's Counties is obviously too small; while that at Cork, built for 500 inmates, is now occupied by patients principally from the City and the East Riding, in which it is situated. Increased provision is required for these two districts; and we feel that at no distant period, fresh arrangements must be made in regard to the Mullingar district, the Asylum belonging to which, erected for the three counties of Meath, Westmeath, and Longford, is all but fully occupied.

District Lunatic Asylums.

Maryborough and Mullingar Asylums.

While speaking of the Cork Asylum, we may observe that in the beginning of the past year a Turkish bath was erected there, by way of experiment, at the suggestion of the Resident Physician, and on our recommendation. So far as we can form an opinion from the cases submitted to us by Dr. Power, who employs it on an average number of from fifteen to twenty cases daily, we have reason to hope, without attributing any direct curative effects to its use, that it will prove a beneficial agent. It has been found to exercise a very soothing influence, and the patients themselves are reported as by no means adverse to its employment. Considering that the simple hot-bath has long been regarded as a valuable adjunct in the treatment of mental disease, it is but reasonable to infer that the Turkish would produce more marked results. In proportion, however, to its powers, caution should be observed in its use. The cost was about £180, including fitments, by which a portion of the heat generated in it, and which otherwise would be wasted, is rendered available for drying-closets and other domestic purposes.

Cork District Asylum.

Introduction of Turkish Baths.

Reverting to our statement relative to the extension of Asylums, now in progress or to be immediately undertaken, coupled with the existing accommodation, it will appear that Ireland is likely to stand in a foremost position—certainly equal to, if not decidedly above, any other country in Europe—as regards the extent of regular asylum provision for the insane classes, and the curative advantages thus prepared for them; for with an aggregate population of less than six millions, we shall have fully 6,400 beds for the lunatic poor supported by public contribution. Fourteen years ago, when we numbered a population of over seven millions, our District Asylums contained but 2,600 patients: they are now available for 4,500, while orders in Council have been framed for Asylums to receive an aggregate of about 1,500 more. The public mind was not formerly, as now, impressed with the necessity—not alone in a social, but eventually even in an economic point of view—of having special institutions for the insane. At present, as we have already stated, but one sentiment would seem to pervade it, and which is evidenced by a general inclination to adopt every reasonable measure that could tend to the cure or alleviation of mental disease.

Extent of accommodation present and prospective.

Assuming the actual and projected accommodation above referred to for the insane poor to amount, when in full working order, to 6,400 beds (if not an exact, a very proximate calculation); and estimating, on an average, the maintenance of each patient at £20 a-year, the whole actual expenditure would be £128,000, which, levied on the Grand Jury valuation, will be as near as possible 2½*d.* in the pound—a levy, however, independent of that for the erection of buildings and the purchase of land, which, advanced in the first instance by Government, is repayable in fourteen years, the original sum not bearing interest.

Probable expenditure.

With reference to the general result of treatment in Irish District Asylums during the two years which this report embraces, the cures calculated on admissions have been 46·64 as against 48·71 in the preceding biennial period; or, taking the daily average of patients, as 14·86 against 16. Though, therefore, not quite so successful as before, they still continue to hold a first place. The mortality, principally from pulmonary and cerebral affections, amounting to 705 on a total of 10,740 under treatment, constitutes the per centage of only 6·56. On ten deaths coroner's inquests were held as being sudden or accidental. In one instance alone was culpability from negligence recorded against the attendant in charge. As our visitations to District Asylums, whether for the purposes of inspection or of attending at Board meetings, are very frequent—annually averaging to each from five to six—and as all correspondence connected with them, in regard to contracts and the examination of quarterly estimates and expenditure, or matters of discipline, &c., is carried on through our office, we are enabled from personal observation to report to your Excellency that they are, on the whole, conducted in a very satisfactory manner, under the immediate control of local Governors, many of whom take a deep interest in their successful management and the welfare of their inmates.

Results of treatment. (App. B., p. 27.)

The regular attendances of Chaplains specially attached to asylums continues to be followed, as we have every reason to know, with marked benefit to a large number of the inmates of our public asylums; in fact, we believe, that in no institutions do the outward ministrations of religion produce a more humanizing effect than in those for the insane. It is therefore with deep concern we have to observe that in one asylum alone in the

Religious ministrations.

DISTRICT LUNATIC ASYLUMS.

three kingdoms—that at Belfast—the majority of a most influential, liberal, and highly enlightened Board, deny admission with the means of carrying on divine worship, to clergymen duly appointed for that desirable purpose. Independently of the solace which would be afforded to many of an afflicted class, whose perceptions of the consolations of Christianity are not obscured by delusions, however strong, on other less important subjects, we cannot see on what reasonable grounds the possible contingency of an abuse can justify a total disuse of means calculated to bestow a comfort on the insane; or, leaving the religious element out of the question, why so powerful an agent on the human mind for remedial purposes, when judiciously brought to bear on it, should be rejected, as in the just-named asylum.

Means of occupation and recreation.

As a general rule, the patients in District Asylums are industriously employed both in and out of doors; and while their comforts and sanitary condition are carefully attended to, means of amusement are not neglected. At the Richmond, Sligo, Belfast, and some other Institutions, there are regularly trained bands of music, with apartments specially allocated for the purposes of recreation; while in the first-named or Metropolitan, besides those females who are engaged in industrial pursuits, there is a class of from fifty to sixty who are instructed by competent teachers in reading, writing, figures, singing, &c., &c.; and so satisfied are we, from the result, that a continued system of tuition must prove beneficial to the insane, by giving a fixity to their thoughts, and diverting them from the subject of their delusions, that in those institutions where the number of patients will justify the application, we intend seeking assistance, through a grant of books and other requisites, from the Board of National Education.

Social condition of patients.

But desirous as we are to promote in every way the amusement of the inmates of our District Hospitals, and to afford them every means of in and out-door occupation suited to their antecedents, it should not be forgotten that a large proportion of them is composed of agricultural labourers, and of individuals from the humblest walks in life. In England, on the contrary, while the insane of a similar position are located to a considerable extent in licensed houses, or, for the sake of economy, in the lunatic wards of union buildings, the regularly constructed borough and county asylums, erected at a cost fully one-third greater than ours, are peopled, for the most part, from the artisan and better instructed classes, and from the shopkeeping and farming communities—both alike accustomed to many domestic comforts, and to which the rural population of this country, it must be admitted, are as yet strangers in no small degree. Nevertheless, although for all practical purposes there may exist an equal amount of substantial advantages in Irish asylums, as shown in the average scale of dietary, clothing, &c., which obtains in them, as well as in the attention paid to direct personal necessities, remedial and other, but above all, in an undeviating humanity towards the insane, it should not be a matter of surprise if, considering the relative social condition of their inmates, a deficiency of furniture, carpeting, and ornament is noticeable in them, as contrasted with many of the more expensively supported establishments in the sister kingdom. Comparisons having occasionally been made between these similar institutions of either country, with reference principally to their interior arrangements, wishing to uphold, but in a spirit of candid emulation, the character and usefulness of our own, we have entered on these explanatory remarks; and would further state for your Excellency's satisfaction that, while many of our institutions are kept with a most creditable taste and neatness, no longer presenting that nakedness hitherto so much complained of, *in all*, under the careful superintendence of their Resident Medical Officers, order, regularity, and a regard to outward comforts, are steadily progressing from day to day, with an extension of certain improvements originated in this, and which are being adopted in other countries.

Attention bestowed on them.

Maryborough Asylum.

For some time past, one institution, that at Maryborough, has been a source of considerable difficulty to us, owing to misunderstandings between the Resident and Visiting Physicians, which have placed the Asylum in rather an unenviable light before the public. We trust, however, that the late Commission of Inquiry, and new rules passed in Council, will bring round a more agreeable state of things; and that the "forbearance and consideration for the feelings of others," the absence of which, hitherto, formed the subject of remark in the Chief Secretary's Letter of the 4th December, 1860, will be duly regarded. We shall be happy, however, when an opportunity offers, to see the Resident Physician, who is himself naturally anxious for a change, transferred to another Asylum.

(*Vide* App. F. p. 65.)

Consulting Physicians.

We have already (Ninth Report, page 14) expressed our views in regard to the expediency of having Consulting or Visiting Physicians attached to District Asylums, stating among other reasons that the satisfaction and sense of security which their appointment afforded the public at large was a strong argument in favour of their continuance.

Still fully entertaining the same opinion, we are not the less satisfied that the status of the Resident Medical Superintendents, who, as a body, are devoted to their duties, ought to be distinctly recognised, and as being directly responsible for the well-being of the insti-

tutions intrusted to their care, that their managerial position should be upheld intact. For these desirable objects, among many others, a new code of rules and regulations are being prepared after mature deliberation, for, we hope, the more cordial and efficient management of Irish District Asylums, and which, if sanctioned by your Excellency in Council, will have the full force of a statute.

District Lunatic Asylums.

New Rules and Regulations.

A detailed statement of the expenses incurred for the support and maintenance of District Asylums in Ireland, during the period embraced in this Report, will be found as usual in the Appendix, from which it will be seen that, notwithstanding considerable outlays for certain repairs and improvements already referred to, and charged to current account, the average cost per head shows but a trifling increase in the last two years, being £20 5*s.* 7*d.* as against £19 19*s.* 2*d.* in the two preceding. In further explanation, it may be remarked, that extensive alterations which have been going on in the old buildings at the Richmond and other Asylums since 1859, have materially increased the annual cost of these institutions, and thus tended to raise the averages of all the rest.

Average cost of maintenance.

It may not be here out of place, as being in itself a subject of considerable importance, to refer to the cost of maintenance of lunatics in regular Asylums and that for the same parties in gaols and poorhouses. In gaols the expense is certainly not below that in Asylums, if it be similarly calculated; on the contrary, we apprehend it will be found considerably higher, amounting to nearly £24 per head per annum. In poorhouses ordinary paupers, including infants, are maintained, one with another, for about £10 5*s.* a-year each; but this average cost of poorhouses does not include the various items of expenditure—for example, establishment charges, repairs, and incidents of all denominations, which are debited in the current maintenance account to the inmates of Irish Asylums; neither does it represent the extra allowances for better food and raiment generally granted in unions to the insane themselves. In regard, therefore, to the lunatics therein, the average of £10 5*s.* is an underestimate; it approaches probably nearer £13 a-year; and in some poorhouses the benevolence of Guardians towards the lunatic will be found to raise his cost of maintenance still higher. Thus the difference of support is not so very great on the public rates as between Asylums on the one part and gaols and workhouses combined on the other. Speaking prospectively—that is, when the full accommodation already projected will have been carried out—it may be in excess of the present aggregate expenditure by from £35,000 to £40,000 a-year for the whole of Ireland; a sum, after all, to be charitably, we will add, economically expended, as thereby we best aid in alleviating the saddest of all visitations; while by applying curative remedies, when fair hopes of recovery may be entertained, we prevent, as far as lies within our power, the insane from becoming fixed and incurable burthens on society. In corroboration of this latter fact, we would refer your Excellency to the result given in Table III., App. B., from which it appears that when a prompt and judicious system of treatment is adopted, one which in an Asylum alone can be efficiently carried out, the recoveries are beyond comparison greater than those at later periods; while the neglected lunatic, be he in prison, in the workhouse, or in his own cottage—deprived of the advantages of an early treatment, dangerous perhaps to himself or others—is likely during life to become a tax on the rate-payers of his district. But far more deplorable consequences may accrue from pauper lunatics being at large, in the propagation of the disease itself through illegitimate children, and for the most part in its worst form, that of idiocy.

Relative cost of Lunatics in Asylums, Gaols, and Poorhouses.

(*Vide* App. p. 29.)

The District Asylums originally constructed in Ireland, nine in number, were built by Commissioners expressly appointed for the purpose under 1 & 2 Geo. 4, cap. 33. The earliest was commenced in 1825, and the latest of them in 1835. Subsequently, the power of these Commissioners vested (1835) in the Board of Public Works, and continued so until the year 1856, when the authority of that Board, so far as lunatic asylums were concerned, was superseded by the 17 & 18 Vic. Under the provisions of the last named Act, your Excellency, by an Order in Council, dated February, 1860, appointed a new Board of Control, the four Commissioners being Sir Richard Griffith, Bart., Colonel M'Kerlie, R.E., and the two Inspectors. The first meeting of the Board was held in April, 1860, since which time it has been engaged in furthering the details connected with the erection and establishment of the asylums already referred to. In doing so, its desire has been to co-operate on all occasions with Boards of Governors, or Committees appointed by Grand Juries, and to obviate, as much as possible, any future cause of complaint on the part of landed proprietors, from their wishes not being consulted when a large expenditure was at stake.

Commissioners for control, &c.

(*Vide* App. F. p. 57.)

POORHOUSES.

Poorhouses.

In these establishments we find an increase of the number of lunatics. On the 1st of April, 1859, there were in them 2,047 individuals labouring under some form or other of mental disease, while, at a corresponding date in the present year, there were 2,534 of

Poorhouses.

Deficiency of lunatic accommodation in Poorhouses.

the same classes. In many of the unions which we visit, the simply idiotic and imbecile, as well as those labouring under epilepsy, except it be to a violent degree, are distributed generally throughout the establishment mixing with the ordinary inmates. In some poorhouses, particularly those adjoining cities or large towns, as in the North and South Dublin Unions, at Kilkenny, Limerick, Belfast, Derry, &c., there are lunatic wards in which, so far as the locality admits of, great humanity is shown towards the patients, some of whom, old and infirm, are continually confined to bed; others are melancholic, or noisy and refractory, exhibiting occasionally dangerous tendencies, but at all times requiring that constant and judicious supervision which can only be afforded in properly constructed buildings. The most marked deficiency which we notice in poorhouses is the utter want of means of classification and facilities for out-door exercise and employment, or for suitable in-door occupation, the same crowded apartments being indiscriminately used for patients under every type of disease; and being occupied also both as day and sleeping rooms, are necessarily ill-ventilated. In fact we cannot imagine a more melancholy existence than a prolonged confinement within the dark and narrow precincts allotted in some unions to lunatics, who, under more favourable circumstances, might be restored to society.

Proposed conversion of Poorhouses to Lunatic Asylums.

As immediately connected with poorhouse arrangements, we would here inform your Excellency that, in the course of 1859, when the subject of increased accommodation for the insane poor of certain districts was under consideration, a strong feeling existed amongst a large section of influential landholders, that some union buildings might be judiciously and economically converted to lunatic purposes; inasmuch as from the prosperous condition of Ireland for the three or four preceding years, the number of their pauper inmates had so materially decreased as to render them at the time all but untenanted. The question was discussed on different occasions by Mr. Cardwell, Sir Thomas Larcom, Mr. Power, Chairman of the Poor Law Board, and the Inspectors.

Objections thereto.

With regard to the future contingent wants of the country, it was urged by Mr. Power, that an ample provision should be in readiness, and that it would not be competent, in the present state of the law, to interfere with the existing poorhouses; moreover, as they actually served for local or district infirmaries, the suppression of any one of them would be a direct injustice to the sick poor of the area to which it belonged. The Inspectors objected, on the ground that the workhouses which could best be spared from their primitive object would, as a rule, be situated in remote, inconvenient, thinly inhabited, and therefore unsuitable localities. To test, however, the merits of the case, the most favourable selection, was made (indeed the only eligible instance that offered)—one having reference to the advantages which the cess-payers of Clare would derive by converting the Corofin Workhouse into an asylum for the county. In order to approximate to a true estimate thereof, a plan was directed to be made out by the Architect attached to the Poor Law Department, for effecting the necessary alterations and additions, so as to accommodate 300 lunatics. This plan, minutely prepared, embraced as much as possible the structural arrangements usually adopted in Irish asylums, the calculated outlay reaching a sum of nearly £10,000.

Corofin Workhouse.

The existing building, intended for 600 ordinary paupers, being available for not more than 130 of the insane classes, it became necessary to project two wings of three stories each, to accommodate the remainder of the patients, and a proportionate staff of officers and attendants.

Expense of changing a Poorhouse into an Asylum.

The original cost of the premises, with twelve acres of land, was £6,700—in other words, between it and that for the additions, the expense would be represented by £16,700, irrespective of the purchase of furniture or of more ground for farming purposes. Further, it was to be apprehended that the arrangements would prove of an inferior character, and by no means equal to those in an institution expressly built for the same purposes in a more central and populous district; one, too, which could be erected, taking every thing into consideration, at about a third more, if so much.

Under these circumstances, the Executive deemed it more advisable for the public service that new asylums altogether should be established; and it is but fair to state, that when the reasons for this decision were set before Grand Juries and other local authorities by the Inspectors, no opposition was raised to it, all parties being of opinion, that as a means to an end, economy, in the long run, too often frustrates its own object.

Gaols.

GAOLS.

The want of sufficient asylum accommodation is best illustrated by the continued committal of dangerous lunatics to gaols, numbering in the two years throughout Ireland no less than 1,365. In some districts prisons may be almost regarded as subsidiary asylums; so far, certainly, as the custody of these parties is concerned, as for instance, in

(*Vide* App. C. ¶3.)

Gaols.

Committal of Lunatics to gaols objectionable.

the Dublin District where there are nearly 100 lunatics so confined; in Wexford, where there are thirty; in Castlebar, twenty-six. Nothing can be more unsatisfactory than this detention of persons labouring under mental disease, no matter what its type may be. In our Reports to Parliament for the last fourteen years, we have unreservedly expressed our opinion on the subject; not that we had reason, except on rare occasions, to complain of any want of care or kindness on the part of the local authorities in their regard, but solely from the fact, that such places are totally unsuited for the proper treatment of lunatics; a residence in them, so far from proving beneficial, having a tendency, if not to fix the disease, at least to protract its continuance; while, on the other hand, their presence is a serious inconvenience, and interferes materially with prison discipline. For these reasons, when vacancies existed, we have always, consistently with a fair regard to the claims of other applicants, promoted the transference of dangerous lunatics to asylums, as the large number of warrants (701) your Excellency has signed for that purpose during the last two years can best testify. It is some gratification to us to find that our continued representations have not been fruitless, as there is now every prospect of means being afforded to relieve effectually the gaols throughout the country from the evil of which we speak; for we have no doubt, when the asylums already projected shall have been completed, the necessity for detaining lunatics in prisons will cease in great measure to exist. We regret that at present we cannot foresee the same early solution to the difficulty in the Metropolitan District, the prisons of which are encumbered with so many insane inmates, unless, as already suggested, an auxiliary asylum be erected in it.

Proposed accommodation for Lunatics belonging to the public service.

If such be decided on, we deem it highly advisable that an accommodation for fifty patients be secured in it by and at the cost of Government, in order to meet accidental demands from the army, navy, constabulary, and other branches of the public service. Heretofore, for example, considerable difficulty has been experienced in making even an indifferent provision for soldiers becoming insane, whether at home or abroad. Enlisted, as they frequently are, at a distance from their native place, and unable to give an account of themselves, it is impossible to find out with certainty the localities to which they belong; and no Asylum Board will admit them as a matter of right, unless their chargeability is fairly established. The same holds good, or is perhaps stronger, in regard to the police force; for when a party belonging to it has been resident for some years in another district, the local authorities of his place of birth not unfrequently deny his claim, because of a long-continued absence from it; whilst those of the county in which he may happen to become insane refuse his application, on the ground that both by birth and the very nature of his duties he is a total stranger. Thus it has occurred, that in the early stages of the malady, active treatment, on which so much depends, has been delayed, and in the end admission only obtained through repeated official applications, or by our own personal interference.

Constabulary patients.

Our attention, too, has been directed by the heads of the Constabulary Department to the necessity of having some regular institution in which, where doubt or suspicion existed, the mental condition of parties belonging to their force might be tested. We believe that a considerable portion of the cost of maintenance, at least for a period of six months, during which time, in a majority of the genuine cases of insanity cures would be effected, might be paid from funds proper to these different services. As the present Under Secretary has frequently communicated with us on this subject, from an anxiety to remedy the evil, we bring the question in this, our Parliamentary Report, under your Excellency's notice.

CENTRAL CRIMINAL ASYLUM AT DUNDRUM.

Central Criminal Asylum.

Condition of Asylum.

This institution needs no particular comment on the present occasion, as we have in our Seventh, Eighth, and Ninth Reports, entered at full length on the various topics of interest connected with its management, both in a legal as well as social point of view. It continues to progress satisfactorily in every respect. The patients, numbering 133, or thirteen more than it was originally proposed to maintain, are for the most part industriously occupied, and as a class are amenable and well conducted, as much so as the inmates of an ordinary asylum; every fair latitude consistent with their safe keeping is freely extended to them, and no particular restraint, from the epithet criminal being attached to their name, is exercised in their regard. The grounds around the building are neatly cultivated, large, and open, presenting any thing but a prison-like appearance; indeed, of the twenty-four acres in the farm, over six lie without the boundary walls; and on them too the inmates from time to time are employed. As the institution has been placed altogether under our control, and its domestic management entrusted to us, we are very frequent in our visitations.

Within the last two years thirty patients have been admitted to and seventeen discharged

CENTRAL CRIMINAL ASYLUM.

from it. Of the latter, three were liberated, on their recovery, through the clemency of your Excellency; seven were discharged as sane, on the expiration of their sentence; three were remitted cured to convict prisons, and five were sent by the Inspectors, at the end of the legal period of confinement, to the asylums of the districts to which they appeared to belong. Thus, of the total discharged, twelve had been restored to reason.

Admission and discharge of criminal Lunatics.

As indicating the general principle of our management, we may remind your Excellency, to whom all documents connected with the admission and discharge of patients are referred for decision, that the greatest caution is exercised in any recommendation emanating from our office; and that, as a rule, when the offence committed has been of an aggravated or serious nature against the person, a full year's probation of sanity, with a certificate of undeviating good character, is required by us prior to forwarding any favourable report of the party. When also there is a reasonable doubt as to the mental condition of the offender at the period of the commission of the offence, or where he has evinced no genuine symptoms of lunacy after its perpetration—furthermore, should a strong and any thing like a justifiable prejudice exist in the public mind, or should personal apprehensions be harboured by the injured party (and such instances are not rare), we are most unwilling to interfere. At the present moment, besides others, there are three homicides quite rational, who have been so for a considerable time—we might even say since their reception—but on whose behalf we have as yet taken no steps. Increased experience continuing to impress us with a belief, the expression of which we have already hazarded, that the act of the lunatic in nine cases out of ten, let it eventuate even in murder, is perhaps more a symptom or the result of disease than aught besides—the casual product of some passing excitement or strong delusion—when a party becomes thoroughly sane and continues so for a lengthened period, unless there be special reasons to the reverse, we feel justified in recommending the exercise of clemency; and, therefore, do not yield to any abstract prejudice hostile to the liberation of a recovered criminal lunatic whose disposition and behaviour brought continually under our observation, have given satisfaction to the Resident Physician, Dr. Corbet, and whose sanity has been conjointly certified by him and the Visiting Physician. One fact is certain, namely, that some of the best behaved and, in disposition, the kindliest of those in the Criminal Asylum at Dundrum, have unfortunately deprived some of their fellow-beings of life. We do not mean, however, to ignore the existence of strong homicidal propensities among the insane, and combined with them a most dangerous and studied adaptation of the means to the end—greater perhaps than exists in connexion with any other delusion of the human mind.

Practice adopted by the Inspectors in reference to discharges.

Since the opening of the Central Asylum, the number of patients who have obtained free discharges amount to 28; and it is gratifying to us to be able to state that, up to this date, there has not been, as far as we are aware of, any instance of misconduct on the part of the persons so discharged.

Difficult cases.

Were we to specify individuals of any particular class with whom we have a difficulty, these would be confined principally, if not wholly, to patients reported from the convict prisons as becoming insane. Fully bearing out the truism of a method being in madness, labouring under the influence of their own perverted minds, they are systematically the same in conduct. For the most part intractable, and, as we stated in a previous Report, from the bad example they give, "if the structural arrangements of the building admitted it, we should place them apart in probationary wards." Some of them have been evidently malingering. One convict, charged with a simple felony, and who had been in the asylum but a short time, effected his escape. He was recaptured soon after, and immediately sent back to prison.

Classes properly entitled to admission.

In reporting to the Executive on cases returned to our Office under the head of criminal, as a rule we have not advised the admission of those whose type, whether of insanity or criminality, did not in our opinion justly constitute them "state prisoners;" for we felt, acting in a spirit of fairness between the public rate-payer on the one hand and Government on the other, that unless some line of demarcation was drawn, we might expect to see, at no remote day, the large class of persons committed as dangerous lunatics to gaol, and apprehended after having committed, meditated, or attempted to commit some indictable offence, converted on trial into criminal lunatics, and thus by "right of title" made claimants for admission into the Dundrum Asylum. It is no unfrequent occurrence for a lunatic to be arrested in the act of committing some very trivial offence—such as tearing his neighbour's coat, breaking a window, or inflicting a blow—for any of which transgressions he might be afterwards acquitted on the plea of insanity or, on arraignment, found incompetent to plead. Had we yielded to the numerous cases reported as being criminals according to the letter of the law, and urged on our attention by local authorities, the Asylum should have been enlarged for double the number of its present patients.

As yet we have endeavoured to make the Dundrum Asylum, built for 120 inmates,

CENTRAL CRIMINAL ASYLUM.

meet the wants of the country; the infirmary, a small detached building, owing to the absence up to the present of any epidemic disease, being converted to the purposes of general accommodation; thus, its twelve beds have been allocated to some of the quiet and more aged patients.

Additional accommodation required.

Within the last twelve months, however, we thought it advisable to apply for the construction of some additional single rooms, to meet emergencies in regard to violent and refractory patients, as well as for a refectory and a reading or recreation hall for the quiet, better educated, and convalescent.

Sanitary condition of Asylum.

The sanitary state of this institution within the past two years has been as usual remarkably good, the deaths being under three per cent., and no epidemic nor accident. It is particularly agreeable to us to be able to inform your Excellency, that not only has the staff itself been sedulous in the performance of the duties assigned by your Excellency to its members, but the different servants and attendants have conducted themselves with great propriety and humanity.

Accounts, &c.

The accounts of the asylum are kept with great precision, and are examined monthly at our office, previous to their transmission to the Commissioners of Audit in London, whose certificates for the correct expenditure of the establishment from its opening to the close of the fiscal year just expired, involving a total of over £30,000, have been duly granted.

The following is a summary of the general condition of the Establishment on the 1st April, 1861—males, 92; females, 41; total, 133—divided thus:—

	Convalescent.	Insane.	Idiotic.
Homicides,	10	18	9
Violent attempts on person,	3	27	3
Minor offences,	4	40	19
Total,		133	

PRIVATE LICENSED HOUSES.

PRIVATE LICENSED HOUSES.

Condition of Private Asylums.

The private lunatic asylums in Ireland, established under the 5 & 6 Vic., cap. 123, have experienced little change since we last reported on their condition. The majority of them are creditably conducted as regards the treatment of their inmates, and the regularity with which the various requirements of the law are complied with. Omissions have occasionally occurred, but as they did not result in any actual injury or injustice to person, we did not deem it necessary to have recourse to legal proceedings. Warnings were given, however, that a repetition of such neglects, or a disregard of the provisions of the Act, would be brought under the notice of the Law Officers of the Crown; and the consequence has been that the offending parties have been since more observant of their duties, particularly in furnishing the different documents connected with the admission and discharge of patients in due form and within the prescribed time. No abuse or tangible act of harshness has occurred to our knowledge, or been reported to us. We have examined into complaints on some few occasions, but as they were not substantiated we could take no action on them.

Infractions of the law.

Neglect of patients by their families.

We regret we cannot speak so favourably in regard to the families of lunatics, who, in too many instances, utterly neglect their afflicted relatives, and think they have fulfilled every moral and social obligation by placing them in safe custody at a distance from home, as if their malady entailed a disgrace on those connected with them. Numerous, far too numerous, are the cases in which the ties of kindred would seem to have been altogether obliterated—months, nay, years passing without an enquiry being made by a brother for a brother, or a child for a parent; and it has not unfrequently occurred, when we thought it incumbent on us to direct the discharge of a patient as fit, if not for full liberty, at least for trial, that strong objections have been urged against our interference, and a sort of personal responsibility endeavoured to be fixed upon us in regard to the future.

New licensed houses.

Within the last two years four new asylums have been licensed: three in the County Dublin, and the other in Armagh. Of the former one is in connexion with the establishment at Lucan, in which eighty-six lunatics belonging to the House of Industry, and supported by Government, are at present located. These patients, we may observe, are very kindly and carefully attended to; they are visited regularly every month, and reported on by us for the information of the Treasury. As exemplifying the longevity of lunatics when properly cared for, these parties will be found to average between sixty and seventy years of age, and one with another are nearly thirty years in hospital. The mortality among them has been singularly low for some years past, being under four per cent.

Want of Asylums for

We have, on several occasions, remarked upon the want of an asylum for a class of

PRIVATE LICENSED HOUSES.

patients who, unable to pay the ordinary stipend in a private institution, and not being paupers, are ineligible for admission into public asylums, and cannot therefore but regard an establishment of an intermediate character most advisable in every point of view. The first private or mixed establishment—indeed the first asylum of any kind erected in Ireland—was in 1745, that by the celebrated Dean Swift. Though subject to our inspection it is not a regularly licensed asylum, being on a charitable foundation. We believe the sphere of its utility could be very extensively increased. It is unfortunately situated in a most inappropriate locality, and very deficient, from its original construction, in many necessaries. The Hospital is under the control and management of a Board of Governors of the highest social position and most benevolently disposed, and at the same time, while having a Resident Medical Superintendent, visited by two Physicians of great eminence. We are satisfied that were the site changed to a more rural position, and a new and perfect edifice erected, replete with modern improvements, as recommended in a letter addressed to a Governor of the Asylum by one of the Inspectors, the change would prove a great boon to the public, while patients who are now detained in one or two private licensed houses, that could well be spared, might be transferred to it, even on the small terms they can afford to pay.

middle class patients. St. Patrick's Hospital.

Vide App. F. p. 64.

Donnybrook Retreat.

The Retreat at Donnybrook, belonging to the Society of Friends, is another mixed private asylum, some of the inmates being admitted free, others paying from £80 to £160 a-year. We have every reason to speak in unqualified terms of satisfaction of this establishment.

St. Vincent's Asylum.

The third and last of the charitable asylums, the St. Vincent's, is now in its fourth year of operation, for the reception of persons in the better classes of life, some of whom are in a condition to pay ; others whose means are very limited, or have been reduced to poverty, are maintained free. On a former occasion we reported very favourably of its management. It continues in every way to deserve our commendation, and when the extensions now in progress are completed, and which are being conducted with a due regard to all the requisites for the comfort and well-being of the insane, St. Vincent's Asylum will prove a very useful addition to the private lunatic establishments of this country. It is self-supporting, and conducted by a religious community of ladies, who derive no emoluments whatever from their self-imposed duties. The inmates, who are all females, are visited daily by Dr. Fitzpatrick, than whom, from his professional character, no gentleman can be more suited to the task.

Results of treatment.

The total number under treatment in private asylums during the two years just expired, amounted to 1,319, of whom 116 were discharged cured, 97 improved, 97 unimproved, and 59 or 4½ per cent. died. The absolute recoveries on the admissions, 370—being 31·40 per cent.

TABLES.

In the annexed Appendices will be found tables of a comprehensive character, compiled with the strictest fidelity and accuracy of detail, and affording, we trust, every requisite information regarding the statistics of insanity, and the results of the treatment adopted. While we look upon all as of practical utility, to some, as being of more general interest and importance in a social point of view, we would specially direct your Excellency's attention.

Lunatics at large.

Appendix A, No. 1, contains a Return showing the number of reputed lunatics, idiots, and epileptics in each of the 260 Constabulary districts into which Ireland is divided, exclusive of those in asylums, gaols, and workhouses, on the 31st of March, 1861. In the year 1856, we applied to the Inspector-General of Constabulary for a Return under the above heading, with the names, sex, age, religion, and residence of the different parties.

Constabulary Returns. (App. A., p. 19.)

The return was made out, and duly authenticated by the Chiefs of the Police in the several districts ; the total number reported being set down at 7,612, divided into 4,222 males and 3,390 females. Early in the present year Sir Henry Brownrigg issued, at our request, the original returns, with directions for the police to institute inquiries respecting each individual, and to make marginal notes of their result. Many changes were found to have taken place in the interval, owing to deaths, recoveries, and removals to asylums and workhouses; the great majority, however, remaining at home. Instructions were also given to add to the original lists the names of all fresh cases.

No class was exempted, rich and poor being alike included. The aggregate shows an increase of 1,379, principally among the idiotic and imbecile. We do not attach any paramount importance to these returns, which from the mode in which they were collected afford no absolute data. They merely show—or profess to show—the total number of persons *reputed* to be more or less mentally affected, or in other words, the stock from which lunacy may be engendered. Of the 8,991 reported, 5,469 are represented as being idiotic or imbecile, 1,871 epileptic, and 1,651 insane. We are induced to think that these returns,

made up without reference one to the other, are approximately correct, from the fact of the relative proportion on the whole of the sexes with each other; the males being 4,959, and the females 4,032—the difference in excess of the former being fairly referrible to the greater number of wandering idiots to be found among them.

The third Table, Appendix A, furnishes more reliable information, inasmuch as it has been certified by the Medical Officers of Poor Law Unions. Of the total number residing in workhouses, 2,534, the lunatics are set down as 635, idiotic or weak mind 1,020, and the epileptic 879. As we have already stated, these classes—particularly the two last-named—are not *necessarily* to be regarded as suitable inmates of asylums ; for unless where imbecility of mind or epilepsy exists to an aggravated extent, or where the latter is accompanied by dangerous tendencies, the subjects of these affections cannot be regarded as standing in need of the supervision which the discipline of an asylum affords. The peculiar merits of each case should therefore form the only data for deciding on its suitability or unsuitability for asylum treatment. *Vide* App. p. 25.

Table I., Appendix B. This Table, minutely arranged, gives in detail the result of treatment in the years 1860 and 1861. The admissions during the two years amounted to 2,575 ; the absolute recoveries being 1,201. 298 were discharged improved, and 127 unimproved, on the requirement of their friends. The deaths on the average number under treatment, 8,411, were 705, of which 10 were accidental and suicidal. Analyzing these figures, the proportion of recoveries on admissions would appear to be 46·64 per cent., and on the daily average under treatment 14·27, while the per centage of deaths calculated on the latter basis amounts to only 8·38. It would appear that of the admissions, 478 were relapsed cases (Table VII., App. B), but, it may be observed, not necessarily within the biennial period ; for one of the characteristics of mental disease is its recurrent nature, even after many years of perfect health. App. p. 27.

From Table II., in the same Appendix, it would appear that of the 2,575 admitted only 14 were under 10 years of age, and these mostly idiotic children who had evinced dangerous tendencies. The great majority, namely 788, were between the ages of 20 and 30, when the powers of the mind and body are alike fully developed. The period between 30 and 40 is represented by 553, and the numbers for each successive decade diminish gradually until we find that only 28 were admitted over 70 years of age. App. p. 28.

On referring to the Tables of Recoveries, a certain parallelism is observable between the relative proportions of recoveries in the different periods just indicated.

Tables III. and IV., are perhaps the most important of all. Under the head of duration of disease prior to admission, in the first-named Table, it appears that in 722 cases, or 60·11 per cent. of the total number of recoveries, judicious asylum treatment had been adopted within four months from the appearance of the disease ; while according to Table IV. it seems that the chances of recovery are most between the first and fourth month after admission, the cures during that period being 506 against 399 during the succeeding eight months, and so on in an inverse ratio as to time ; the longer the period of illness, the less the probability of cure. The proportion of the probably curable to the probably incurable stands, we regret to add (Table II.) at 1,073 to 3,216. App. pp. 29, 30, & 31.

From Table X., Appendix B, showing the supposed cause of insanity, we learn that the moral causes predominate with regard to females, the proportion being in 800 ascertained cases, 368 males against 532 female cases ; whilst in the other, physical causes, particularly those arising from intemperance and irregularity of life, prevail to a larger extent among males, in the proportion under this one head alone of 241 males to 82 females, and on the total ascertained physical causes 505 against 286. Hereditary transmission is traceable in 495 cases out of 2,186 in which the cause of disease was ascertained. From the above it will appear that out of the total number the origin of which is believed to be known, 818, or 37 per cent., are ascribable to hereditary transmission and intemperance combined. The most melancholy instance of this that has come under our notice was in a northern workhouse, in which were four imbecile or epileptic children, the offspring of parents, one of whom had died insane, and the other from the effects of *delirium tremens*. App. p. 34.

With reference to the hereditary character of insanity, we would observe that mental, like bodily affections, gradually wear out from the intermixture of blood; we have not seen a case in unbroken descent to the fourth generation ; the most marked instance we know at present is in the Carlow Asylum, where the grandfather and father had both been patients, the latter dying in it; the son is now an inmate. The spread of lunacy would appear to be more through a collateral extension within certain generations. Hereditary character of insanity.

Table XII. gives the social condition of patients in asylums, from which it will be seen, that while the sexes generally are all but equal as to numbers, being 2,165 males, and 2,124 females, a marked difference exists between the respective proportions as regards marriage and celibacy. For instance, in 983 returned as married, 429 are males and 554 females ; and, on the contrary, of 2,914 set down as single, 1,617, are women and only App. p. 35.

Disproportion between number of married and unmarried lunatics.

1,297 men; in the relative number of the widowed the disproportion would appear still greater, there being only 68 males to 204 females. The explanation of this discrepancy exists, we believe, in the fact that the moral causes of insanity, which find their origin in the griefs and anxieties incidental to married life, press less heavily on man than on the sensitive mind of woman; while as regards widowhood, the woman, deprived of her natural support, and thrown perhaps on the world, must feel her position more acutely than a man correspondingly situated. In married life, it may also be added, the protection of home exercises a salutary influence on the conduct of the male sex, whilst among unmarried men, on the contrary, continued dissipation in early life, irregular hours, and among other causes we are disposed to enumerate the immoderate use of tobacco (so injurious to the nervous system), act as predisposing causes to mental affections.

App. p. 35.

From Table XIII., exhibiting the educational condition of patients in Irish asylums, it would seem that out of 4,289 individuals, 266 only are well educated; 625 read and write well, and 974 read and write indifferently; so that the remainder, or 56 per cent. may be taken as uneducated. In one institution belonging to an agricultural district and containing 333 inmates, 36 alone can read and write well; while in another large asylum, connected with an important manufacturing city in the north, with 357 patients taken from a mixed community, the small number of 19 represents the fairly educated; facts fully bearing out the remark already made by us with regard to the social condition of the classes from which public asylums in Ireland are mainly peopled.

App. p. 36 and 37.

Tables XVI. and XVII. afford very satisfactory data, as from them we find that the daily average of both sexes employed in asylums constitutes nearly two-thirds of their inmates. In 1861, 557 males were engaged in farm labour, while the produce from the total quantity of land under cultivation, after the payment of every expense, left a net profit of £2,336 10*s.* 3*d.*, of which £1,365 14*s.* 3*d.* was carried to the cash account, the difference being the estimated value of vegetables and other articles entered for house consumption. But remunerative as this kind of employment may prove to be in lunatic asylums, a far more important consideration is connected with it, as means are thereby afforded for healthful out-door occupation congenial to the taste and habits of the patients themselves.

App. p. 38.

Table XIX., previously referred to in this report, contains a return of receipts and expenditure. The balance on hands in 1860 was £6,804 7*s.* 6*d.*; that in 1861, £6,179 2*s.* 5*d.* The total receipts for the two years, £183,306 15*s.* 6*d.* The outlay for each year, and for each asylum, is given under seventeen different headings, and thus supply in detail all due information. The cost of maintenance will be found to vary in different institutions, owing to incidental circumstances which, even in the same establishments, cause variations from year to year.

App. p. 53. "Dangerous lunatics."

Appendix C, Table V., affords a return of the number committed as dangerous lunatics during the two years embraced in the Report; the number of both sexes being 1,365, of whom 1,195 were confined in the county prisons, and 170 in those of the metropolis. We have, on former occasions, represented the large taxation imposed on the rates of the City of Dublin for the maintenance of dangerous lunatics; assuming its population at 260,000, it would thus appear that one in the proportion of every 1,350 is committed under the Act to the gaols of the metropolis, and only 1 in every 5,200 of the general population to those throughout the country. The excess, therefore, must be referrible in a great measure to the causes already stated by us—chief among which is the constant influx of strangers.

App. p. 55 and 56.

Appendices D, and E, embody the usual statistics connected with the Central Criminal Asylum, and houses licensed under the 5th and 6th Vic., cap. 123, for the reception of paying patients, &c., &c., and need no particular comment.

Causes of apparent increase of insanity.

Before concluding this report, we would advert to a question much mooted—Is insanity on the increase? We have no certain facts to guide us to a certain conclusion as to whether mental diseases are in a state of greater propagation now than formerly. We know, however, and it appears to us a natural result, that with fresh accommodation for the insane, fresh though long existing cases are presented for admission into asylums, and thus an apparent increase of lunacy may be observed. Other causes have been combining to add directly (without an actual extension of the malady itself) to a perceptible growth, or an enlarged ratio of the insane to the sane part of the population.

1st.—The care bestowed on the lunatic classes, and the improved system of treatment latterly adopted in their regard, have tended materially to the prolongation of life among them, and to their consequent accumulation. Of this fact, instances are afforded by the patients at the Lucan Spa House; their ages averaging from 60 to 70 years—the disease in some parties existing over thirty.

2ndly.—Science, and even public opinion, now accept as indicative of lunacy, affections

which in former days, though then quite as much developed as in the present, were classed under a different category from mental disease or aberrations of the intellect; and though it may occasionally happen, particularly in the case of criminals, that a forced extension is made of insanity to protect the accused, there can be no doubt that in numerous instances punishment formerly awaited on offences to which, judged by the present recognised symptoms of mental alienation, it would now be deemed a just and legitimate bar.

Causes of apparent increase of insanity.

3rdly.—Another reason which gives a greater show to insanity now-a-days is connected with the gradually and happily expiring sentiment, that lunacy is as it were a discreditable visitation to the families of the afflicted—a sentiment not ignored formerly even by the humblest class in life. Formerly patients were frequently kept concealed in garrets among the rich, in out-houses among the poor, till liberated by death. Fortunately this feeling is all but extinct, and asylums, both public and private, are now gladly taken advantage of when the necessity unhappily arises.

4thly.—In this country emigration, while it has so seriously diminished the population at large, has not in a like manner affected the number of lunatics, the majority of whom, left behind, have not only found a refuge in our public institutions, but, protected in them from all the sufferings and privations incidental to the poor, are insured a greater likelihood of a longer existence. Thus, then, though in reality, at the present date and thirty years ago the relative proportion of the insane to the sane born in Ireland might be nearly equal, a far greater amount of lunacy is now recognizable. There exists, however, little doubt but that insanity is, in great measure, a disease of intellect—one connected with the development of the human mind; and it is therefore highly presumable that in this age of excitement and rapid advancement in arts and sciences mental affections may be more prevalent than before; but in the absence of statistical data, as yet unobtained by us, the extent thereof can be but a mere matter of surmise.

Influence of religious revivals on the promotion of insanity.

We are afforded an illustration of the influence which a strong temporary excitement obtains over the manifestations of the mind, in the religious revivalism so prevalent a year or two since in a northern district, where more cases of insanity resulted therefrom within the couple of months it lasted than had taken place in the whole preceding year. It would be a mistake, however, to suppose that because the immediate cause of mental aberrations may be referrible to a religious enthusiasm, the type of the disease, or the delusions themselves, must be of the same character; the reverse would almost seem to hold good, as proved by the number of parties committed at the time to gaol as violent or dangerous lunatics. Many persons with a predisposition to the malady would pass through life quite sane in all its relations, if not yielding to dissipation, or exposed to strong exciting causes, which, no matter what they be, will develop the weaker points and latent tendencies of the mind.

Respectfully submitting to your Excellency the foregoing Report and observations on the state of lunacy and lunatic asylums in Ireland,

We have the honour to be

Your Excellency's obedient Servants,

JOHN NUGENT.

GEORGE W. HATCHELL.

July 16*th*, 1861.

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No. 1.—Table showing the Number of Lunatics, Idiots, and Epileptics, in each Police District, exclusive of those in Asylums, Gaols, or Workhouses, on 1st April, 1861.

Districts.	Lunatics.			Idiots and Imbeciles.			Epileptics.			General Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
County of Antrim.												
Antrim,	12	5	17	37	16	53	12	9	21	61	30	91
Ballycastle,	5	1	6	21	10	31	5	7	12	31	18	49
Ballymena,	13	5	18	21	14	35	4	3	7	38	22	60
Ballymoney,	6	3	9	31	16	47	5	5	10	42	24	66
Belfast,	4	1	5	30	13	43	3	3	6	37	17	54
Carrickfergus,	7	12	19	32	34	66	10	9	19	49	55	104
Glenarm,	6	3	9	14	16	30	3	5	8	23	24	47
Lisburn,	7	4	11	24	17	41	3	2	5	34	23	57
Total,	60	34	94	210	136	346	45	43	88	315	213	528
County of Armagh.												
Armagh,	5	6	11	29	18	47	11	16	27	45	40	85
Ballybot,	8	5	13	16	4	20	4	2	6	28	11	39
Crossmaglen,	4	4	8	20	11	31	3	1	4	27	16	43
Newtownhamilton,	4	5	9	31	10	41	9	8	17	44	23	67
Portadown,	10	6	16	11	15	26	18	9	27	39	30	69
Total,	31	26	57	107	58	165	45	36	81	183	120	303
County of Carlow.												
Bagenalstown,	3	3	6	10	2	12	–	6	6	13	11	24
Borris,	5	1	6	11	6	17	4	5	9	20	12	32
Carlow,	–	2	2	3	4	7	4	1	5	7	7	14
Tullow,	5	2	7	15	11	26	9	6	15	29	19	48
Total,	13	8	21	39	23	62	17	18	35	69	49	118
County of Cavan.												
Arva,	–	1	1	8	1	9	2	3	5	10	5	15
Baileborough,	6	5	11	20	15	35	4	10	14	30	30	60
Ballyjamesduff,	3	2	5	18	9	27	5	4	9	26	15	41
Belturbet,	2	1	3	6	12	18	–	2	2	8	15	23
Cavan,	11	9	20	12	5	17	6	6	12	29	20	49
Cootehill,	5	3	8	19	8	27	2	3	5	26	14	40
Killeshandra,	–	2	2	8	10	18	6	5	11	14	17	31
Swanlinbar,	5	1	6	13	14	27	3	3	6	21	18	39
Total,	32	24	56	104	74	178	28	36	64	164	134	298
County of Clare.												
Ballyvaughan,	2	2	4	5	3	8	–	1	1	7	6	13
Broadford,	–	1	1	5	2	7	2	1	3	7	4	11
Corrofin,	2	2	4	9	4	13	3	4	7	14	10	24
Ennistymon,	4	1	5	11	9	20	5	2	7	20	12	32
Ennis,	4	–	4	3	4	7	–	–	–	7	4	11
Killadysert,	1	4	5	10	3	13	4	3	7	15	10	25
Killaloe,	1	–	1	8	5	13	2	1	3	11	6	17
Kilrush,	1	1	2	16	17	33	1	3	4	18	21	39
Newmarket-on-Fergus,	5	4	9	9	5	14	11	11	22	25	20	45
Tulla,	2	1	3	12	2	14	4	5	9	18	8	26
Total,	22	16	38	88	54	142	32	31	63	142	101	243
County of Cork, E.R.												
Ballincollig,	–	1	1	18	5	23	1	1	2	19	7	26
City of Cork,	1	4	5	4	10	14	3	3	6	8	17	25
Charleville,	3	2	5	9	6	15	3	–	3	15	8	23
Fermoy,	1	6	7	20	12	32	9	5	14	30	23	53
Glanmire,	1	1	2	4	–	4	2	–	2	7	1	8
Kanturk,	6	1	7	9	8	17	3	7	10	18	16	34
Kinsale,	–	–	–	5	6	11	–	–	–	5	6	11
Mallow,	–	2	2	14	9	23	8	10	18	22	21	43
Midleton,	1	3	4	18	9	27	6	2	8	25	14	39
Mitchelstown,	1	5	6	21	6	27	1	–	1	23	11	34
Passage,	7	4	11	6	8	14	1	7	8	14	19	33
Youghal,	2	1	3	10	10	20	3	2	5	15	13	28
Total,	23	30	53	138	89	227	40	37	77	201	156	357

No. 1.—Table showing the Number of Lunatics, Idiots, and Epileptics, in each Police District, exclusive of those in Asylums, Gaols, or Workhouses, on 1st April, 1861—*continued.*

Districts.	Lunatics.			Idiots and Imbeciles.			Epileptics.			General Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
County of Cork, W.R.												
Bandon,	2	5	7	23	11	34	7	3	10	32	19	51
Bantry,	7	1	8	10	6	16	2	5	7	19	12	31
Castletown,	–	–	–	5	3	8	2	1	3	7	4	11
Clonakilty,	2	7	9	9	6	15	3	2	5	14	15	29
Dunmanway,	–	4	4	8	5	13	–	3	3	8	12	20
Macroom,	4	6	10	11	8	19	8	5	13	23	19	42
Skibbereen,	3	3	6	11	5	16	2	5	7	16	13	29
Skull,	1	1	2	5	5	10	5	2	7	11	8	19
Total,	19	27	46	82	49	131	29	26	55	130	102	232
County of Donegal.												
Ballyshannon,	6	7	13	8	5	13	3	8	11	17	20	37
Buncrana,	3	1	4	12	11	23	2	1	3	17	13	30
Carndonagh,	3	6	9	14	19	33	8	3	11	25	28	53
Dunfanaghy,	8	6	14	7	11	18	–	–	–	15	17	32
Glenties,	1	4	5	14	9	23	3	3	6	18	16	34
Killybegs,	9	4	13	13	17	30	5	10	15	27	31	58
Letterkenny,	4	8	12	17	6	23	6	5	11	27	19	46
Ramelton,	9	2	11	23	15	38	7	2	9	39	19	58
Raphoe,	9	13	22	26	34	60	7	2	9	42	49	91
Total,	52	51	103	134	127	261	41	34	75	227	212	439
County of Down.												
Ballynahinch,	10	5	15	28	18	46	5	9	14	43	32	75
Banbridge,	9	–	9	18	12	30	4	8	12	31	20	51
Downpatrick,	7	3	10	27	20	47	6	7	13	40	30	70
Hillsborough,	4	8	12	25	12	37	5	9	14	34	29	63
Newcastle,	11	12	23	27	12	39	2	8	10	40	32	72
Newtownards,	11	12	23	24	34	58	8	7	15	43	53	96
Rathfriland,	13	8	21	52	37	89	8	9	17	73	54	127
Total,	65	48	113	201	145	346	38	57	95	304	250	554
City of Dublin.												
A Division,	5	5	10	11	5	16	4	–	4	20	10	30
B do.	–	3	3	11	6	17	–	1	1	11	10	21
C do.	2	3	5	11	4	15	–	–	–	13	7	20
D do.	3	4	7	8	4	12	2	1	3	13	9	22
E do.	3	5	8	8	7	15	1	–	1	12	12	24
F do.	9	5	14	10	11	21	2	–	2	21	16	37
Total,	22	25	47	59	37	96	9	2	11	90	64	154
County of Dublin.												
Balbriggan,	4	4	8	14	4	18	5	1	6	23	9	32
Clontarf,	4	3	7	6	3	9	4	2	6	14	8	22
Lucan,	3	5	8	6	4	10	1	2	3	10	11	21
Rathfarnham,	3	4	7	10	6	16	2	2	4	15	12	27
Swords,	2	2	4	7	10	17	1	–	1	10	12	22
Total,	16	18	34	43	27	70	13	7	20	72	52	124
County of Fermanagh.												
Arney,	–	1	1	25	10	35	4	3	7	29	14	43
Derrygonnelly,	3	2	5	12	11	23	–	–	–	15	13	28
Enniskillen,	2	4	6	26	16	42	3	4	7	31	24	55
Kesh,	3	2	5	12	15	27	3	6	9	18	23	41
Lisnaskea,	3	7	10	29	27	56	1	1	2	33	35	68
Total,	11	16	27	104	79	183	11	14	25	126	109	235
County of Galway, E.R.												
Athenry,	1	2	3	7	3	10	3	2	5	11	7	18
Ballinasloe,	1	–	1	10	5	15	2	3	5	13	8	21
Ballygar,	1	–	1	7	8	15	4	2	6	12	10	22
Eyrecourt,	2	1	3	5	–	5	1	–	1	8	1	9
Loughrea,	–	2	2	4	9	13	2	–	2	6	11	17
Marble Hill,	1	1	2	5	6	11	5	3	8	11	10	21
Mount Shannon,	1	1	2	4	4	8	1	1	2	6	6	12
Portumna,	2	2	4	3	2	5	3	2	5	8	6	14
Total,	9	9	18	45	37	82	21	13	34	75	59	134

No. 1.—Table showing the Number of Lunatics, Idiots, and Epileptics, in each Police District, exclusive of those in Asylums, Gaols, or Workhouses, on 1st April, 1861—*continued.*

Districts.	Lunatics.			Idiots and Imbeciles.			Epileptics.			General Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
County of Galway, W.R.												
Clifden,	–	1	1	8	6	14	4	4	8	12	11	23
Dunmore,	4	2	6	12	10	22	6	4	10	22	16	38
Fair Hill,	–	1	1	1	7	8	5	7	12	6	15	21
Galway,	4	4	8	8	8	16	1	–	1	13	12	25
Gort,	5	4	9	11	7	18	4	7	11	20	18	38
Headford,	2	–	2	3	9	12	3	3	6	8	12	20
Oughterard,	–	–	–	2	3	5	1	–	1	3	3	6
Roundstone,	–	–	–	1	3	4	3	2	5	4	5	9
Spiddal,	2	–	2	1	4	5	–	2	2	3	6	9
Tuam,	5	3	8	17	8	25	2	3	5	24	14	38
Total,	22	15	37	64	65	129	29	32	61	115	112	227
County of Kerry.												
Caherciveen,	–	2	2	20	7	27	2	6	8	22	15	37
Castleisland,	2	2	4	12	2	14	2	4	6	16	8	24
Dingle,	–	4	4	9	6	15	–	6	6	9	16	25
Kenmare,	1	1	2	6	3	9	2	2	4	9	6	15
Killarney,	1	1	2	11	6	17	1	–	1	13	7	20
Listowel,	6	5	11	20	11	31	4	7	11	30	23	53
Tralee,	1	2	3	3	10	13	3	3	6	7	15	22
Total,	11	17	28	81	45	126	14	28	42	106	90	196
County of Kildare.												
Athy,	3	1	4	8	5	13	4	4	8	15	10	25
Curragh,	–	–	–	–	–	–	–	–	–	–	–	–
Leixlip,	1	2	3	13	5	18	5	3	8	19	10	29
Naas,	–	–	–	11	7	18	1	3	4	12	10	22
Rathangan,	6	3	9	16	8	24	3	7	10	25	18	43
Robertstown,	3	5	8	20	13	33	3	16	19	26	34	60
Total,	13	11	24	68	38	106	16	33	49	97	82	179
County of Kilkenny.												
Callan,	2	1	3	11	11	22	4	3	7	17	15	32
Castlecomer,	5	4	9	12	17	29	8	10	18	25	31	56
Dunmore,	1	1	2	10	8	18	–	3	3	11	12	23
Gowran,	–	–	–	10	7	17	4	1	5	14	8	22
Johnstown,	1	–	1	9	5	14	2	6	8	12	11	23
Kilkenny,	–	5	5	2	1	3	2	5	7	4	11	15
Pilltown,	5	2	7	14	10	24	11	3	14	30	15	45
Rosbercon,	3	1	4	9	4	13	1	–	1	13	5	18
Thomastown,	2	3	5	12	11	23	6	9	15	20	23	43
Total,	19	17	36	89	74	163	38	40	78	146	131	277
King's County.												
Edenderry,	–	1	1	14	14	28	8	6	14	22	21	43
Ferbane,	2	4	6	3	9	12	2	1	3	7	14	21
Frankford,	2	3	5	9	5	14	1	3	4	12	11	23
Parsonstown,	2	3	5	14	10	24	2	1	3	18	14	32
Shinrone,	1	1	2	2	8	10	–	–	–	3	9	12
Tullamore,	3	8	11	21	12	33	5	8	13	29	28	57
Total,	10	20	30	63	58	121	18	19	37	91	97	188
County of Leitrim.												
Ballinamore,	5	2	7	10	4	14	2	7	9	17	13	30
Carrick-on-Shannon,	3	1	4	2	5	7	–	–	–	5	6	11
Carrigallen,	1	–	1	6	8	14	–	–	–	7	8	15
Drumkeeran,	1	5	6	21	12	33	1	–	1	23	17	40
Manorhamilton,	8	6	14	21	15	36	4	2	6	33	23	56
Mohill,	4	4	8	13	8	21	5	9	14	22	21	43
Total,	22	18	40	73	52	125	12	18	30	107	88	195
County of Limerick.												
Adare,	1	1	2	9	7	16	1	1	2	11	9	20
Bruff,	2	2	4	10	8	18	3	5	8	15	15	30
Caherconlish,	–	1	1	5	11	16	–	–	–	5	12	17
Cappamore,	3	2	5	7	5	12	2	4	6	12	11	23
Castleconnell,	1	–	1	4	1	5	2	–	2	7	1	8
Glin,	3	4	7	13	3	16	6	6	12	22	13	35
Kilfinane,	3	1	4	16	9	25	9	1	10	28	11	39
Limerick,	1	1	2	6	3	9	1	–	1	8	4	12
Newcastle,	4	1	5	15	15	30	–	2	2	19	18	37
Rathkeale,	2	3	5	9	4	13	1	6	7	12	13	25
Limerick (City of),	2	5	7	4	3	7	3	1	4	9	9	18
Total,	22	21	43	98	69	167	28	26	54	148	116	264

No. 1.—Table showing the Number of Lunatics, Idiots, and Epileptics, in each Police District, exclusive of those in Asylums, Gaols, or Workhouses, on 1st April, 1861—*continued.*

Districts.	Lunatics.			Idiots and Imbeciles.			Epileptics.			General Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
County of Londonderry.												
Coleraine,	8	9	17	28	14	42	1	1	2	37	24	61
Londonderry,	3	3	6	24	17	41	2	8	10	29	28	57
Maghera,	11	1	12	13	10	23	6	1	7	30	12	42
Magherafelt,	19	8	27	42	34	76	10	3	13	71	45	116
Newtownlimavady,	10	10	20	29	22	51	11	8	19	50	40	90
Total,	51	31	82	136	97	233	30	21	51	217	149	366
County of Longford.												
Ballymahon,	–	–	–	12	6	18	–	–	–	12	6	18
Drumlish,	3	3	6	12	14	26	4	7	11	19	24	43
Granard,	4	–	4	7	8	15	4	7	11	15	15	30
Killashee,	4	3	7	7	15	22	1	5	6	12	23	35
Longford,	3	5	8	12	11	23	4	3	7	19	19	38
Total,	14	11	25	50	54	104	13	22	35	77	87	164
County of Louth.												
Ardee,	2	11	13	7	6	13	1	1	2	10	18	28
Carlingford,	–	1	1	14	4	18	2	–	2	16	5	21
Dundalk,	7	4	11	17	6	23	5	6	11	29	16	45
Dunleer,	7	6	13	17	7	24	5	–	5	29	13	42
Louth,	1	1	2	5	9	14	1	3	4	7	13	20
Total,	17	23	40	60	32	92	14	10	24	91	65	156
County of Mayo.												
Ballina,	–	2	2	10	13	23	1	4	5	11	19	30
Ballaghadereen,	5	3	8	7	6	13	4	4	8	16	13	29
Ballinrobe,	3	–	3	6	7	13	2	2	4	11	9	20
Belmullet,	1	1	2	1	4	5	4	6	10	6	11	17
Castlebar,	2	2	4	8	5	13	2	–	2	12	7	19
Claremorris,	1	4	5	6	6	12	2	–	2	9	10	19
Crossmolina,	–	3	3	8	5	13	6	8	14	14	16	30
Foxford,	2	2	4	6	13	19	7	9	16	15	24	39
Newport,	3	1	4	9	4	13	1	1	2	13	6	19
Swineford,	3	4	7	8	9	17	1	4	5	12	17	29
Westport,	1	3	4	8	7	15	4	4	8	13	14	27
Total,	21	25	46	77	79	156	34	42	76	132	146	278
County of Meath.												
Athboy,	1	1	2	11	6	17	7	5	12	19	12	31
Dulcek,	–	2	2	8	6	14	4	1	5	12	9	21
Dunshaughlin,	6	5	11	4	4	8	–	5	5	10	14	24
Kells,	6	1	7	11	8	19	2	4	6	19	13	32
Knock,	1	–	1	18	19	37	6	2	8	25	21	46
Longwood,	–	–	–	3	4	7	2	1	3	5	5	10
Navan,	4	2	6	11	6	17	17	7	24	32	15	47
Trim,	2	3	5	15	12	27	2	–	2	19	15	34
Drogheda (Town of),	1	2	3	3	4	7	2	–	2	6	6	12
Total,	21	16	37	84	69	153	42	25	67	147	110	257
County of Monaghan.												
Carrickmacross,	3	1	4	6	12	18	3	3	6	12	16	28
Castleblayney,	11	10	21	26	31	57	6	6	12	43	47	90
Clones,	–	4	4	20	15	35	1	3	4	21	22	43
Monaghan,	12	20	32	30	25	55	11	8	19	53	53	106
Total,	26	35	61	82	83	165	21	20	41	129	138	267
Queen's County.												
Abbeyleix,	1	1	2	8	4	12	–	2	2	9	7	16
Ballickmoyler,	2	–	2	8	4	12	5	–	5	15	4	19
Borris-in-Ossory,	–	1	1	6	8	14	5	2	7	11	11	22
Maryborough,	1	3	4	8	10	18	2	–	2	11	13	24
Mountmellick,	3	3	6	17	15	32	2	5	7	22	23	45
Mountrath,	–	2	2	4	4	8	4	4	8	8	10	18
Rathdowney,	–	–	–	2	2	4	1	1	2	3	3	6
Stradbally,	–	–	–	7	6	13	4	2	6	11	8	19
Total,	7	10	17	60	53	113	23	16	39	90	79	169

No. 1.—Table showing the Number of Lunatics, Idiots, and Epileptics, in each Police District, exclusive of those in Asylums, Gaols, or Workhouses, on 1st April, 1861—*continued.*

Districts.	Lunatics.			Idiots and Imbeciles.			Epileptics.			General Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
County of Roscommon.												
Athlone,	5	1	6	5	5	10	1	2	3	11	8	19
Boyle,	1	1	2	5	3	8	8	–	8	14	4	18
Castlerea,	1	4	5	13	8	21	8	6	14	22	18	40
Elphin,	1	3	4	6	6	12	3	1	4	10	10	20
Frenchpark,	1	1	2	16	6	22	7	5	12	24	12	36
Roscommon,	1	2	3	19	10	29	1	–	1	21	12	33
Strokestown,	2	1	3	15	4	19	1	5	6	18	10	28
Total,	12	13	25	79	42	121	29	19	48	120	74	194
County of Sligo.												
Ballisodare,	2	6	8	5	5	10	4	4	8	11	15	26
Ballymote,	7	1	8	6	4	10	1	1	2	14	6	20
Easkey,	8	9	17	6	12	18	3	5	8	17	26	43
Grange,	2	3	5	5	7	12	3	2	5	10	12	22
Riverstown,	5	3	8	7	2	9	2	3	5	14	8	22
Sligo,	1	–	1	5	5	10	1	1	2	7	6	13
Tubbercurry,	2	1	3	9	10	19	4	–	4	15	11	26
Total,	27	23	50	43	45	88	18	16	34	88	84	172
County of Tipperary, N.R.												
Borrisokane,	4	5	9	8	7	15	12	9	21	24	21	45
Borrisoleigh,	2	2	4	10	9	19	2	–	2	14	11	25
Lorrha,	–	–	–	2	6	8	–	–	–	2	6	8
Nenagh,	6	4	10	8	9	17	5	2	7	19	15	34
Newport,	1	1	2	8	2	10	–	2	2	9	5	14
Portroe,	3	–	3	5	2	7	4	2	6	12	4	16
Roscrea,	1	1	2	5	5	10	4	1	5	10	7	17
Templemore,	7	4	11	8	4	12	2	5	7	17	13	30
Thurles,	–	–	–	8	4	12	–	–	–	8	4	12
Total,	24	17	41	62	48	110	29	21	50	115	86	201
County of Tipperary, S.R.												
Ballynonty,	2	–	2	8	4	12	2	1	3	12	5	17
Bansha,	3	–	3	3	5	8	1	5	6	7	10	17
Cahir,	–	–	–	3	2	5	2	1	3	5	3	8
Carrick-on-Suir,	2	2	4	9	3	12	–	1	1	11	6	17
Cashel,	2	2	4	6	1	7	1	2	3	9	5	14
Clogheen,	1	–	1	7	2	9	2	–	2	10	2	12
Clonmel,	5	4	9	9	10	19	5	3	8	19	17	36
Dundrum,	1	2	3	8	7	15	2	2	4	11	11	22
Mullinahone,	2	2	4	19	9	28	2	2	4	23	13	36
Tipperary,	4	2	6	12	10	22	3	2	5	19	14	33
Total,	22	14	36	84	53	137	20	19	39	126	86	212
County of Tyrone.												
Clogher,	6	6	12	23	29	52	3	1	4	32	36	68
Cookstown,	12	5	17	17	18	35	7	4	11	36	27	63
Dungannon,	15	11	26	33	30	63	10	16	26	58	57	115
Fintona,	8	4	12	26	11	37	5	12	17	39	27	66
Newtownstewart,	–	2	2	18	12	30	2	1	3	20	15	35
Omagh,	4	2	6	23	14	37	3	6	9	30	22	52
Strabane,	1	1	2	20	18	38	2	4	6	23	23	46
Total,	46	31	77	160	132	292	32	44	76	238	207	445
County of Waterford.												
Ballinamult,	1	1	2	8	3	11	3	4	7	12	8	20
Cappoquin,	–	5	5	6	5	11	4	2	6	10	12	22
Clashmore,	1	3	4	9	2	11	9	1	10	19	6	25
Dungarvan,	4	3	7	5	8	13	8	6	14	17	17	34
Portlaw,	5	1	6	14	2	16	8	8	16	27	11	38
Tramore,	–	7	7	11	10	21	2	–	2	13	17	30
Waterford (City of),	4	3	7	3	2	5	1	–	1	8	5	13
Total,	15	23	38	56	32	88	35	21	56	106	76	182

No. 1.—Table showing the Number of Lunatics, Idiots, and Epileptics, in each Police District, exclusive of those in Asylums, Gaols, or Workhouses, on 1st April, 1861—*continued.*

Districts.	Lunatics.			Idiots and Imbeciles.			Epileptics.			General Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
County of Westmeath.												
Ballinacarrig,	3	8	11	10	9	19	3	3	6	16	20	36
Castlepollard,	1	1	2	7	5	12	5	2	7	13	8	21
Delvin,	2	1	3	6	8	14	2	2	4	10	11	21
Glasson,	1	–	1	8	5	13	2	1	3	11	6	17
Kilbeggan,	4	3	7	7	3	10	4	6	10	15	12	27
Moate,	2	1	3	10	9	19	3	1	4	15	11	26
Mullingar,	3	2	5	9	8	17	6	9	15	18	19	37
Total,	16	16	32	57	47	104	25	24	49	98	87	185
County of Wexford.												
Arthurstown,	6	4	10	11	12	23	1	1	2	18	17	35
Enniscorthy,	2	3	5	9	2	11	6	6	12	17	11	28
Gorey,	4	5	9	4	7	11	3	3	6	11	15	26
New Ross,	6	1	7	12	11	23	2	1	3	20	13	33
Newtownbarry,	3	1	4	9	7	16	3	4	7	15	12	27
Oulart,	1	5	6	7	10	17	3	4	7	11	19	30
Taghmon,	2	4	6	20	15	35	9	12	21	31	31	62
Wexford,	12	9	21	33	15	48	9	7	16	54	31	85
Total,	36	32	68	105	79	184	36	38	74	177	149	326
County of Wicklow.												
Blessinton,	2	1	3	5	5	10	1	1	2	8	7	15
Baltinglass,	5	4	9	9	5	14	–	2	2	14	11	25
Bray,	1	3	4	5	6	11	6	4	10	12	13	25
Rathdrum,	1	–	1	19	10	29	5	4	9	25	14	39
Tinahely,	4	3	7	15	6	21	5	3	8	24	12	36
Wicklow,	4	3	7	10	8	18	3	4	7	17	15	32
Total,	17	14	31	63	40	103	20	18	38	100	72	172

No. 2.—Summary of the foregoing by Counties.

Counties.	Lunatics.			Idiots.			Epileptics.			General Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Antrim,	60	34	94	210	136	346	45	43	88	315	213	528
Armagh,	31	26	57	107	58	165	45	36	81	183	120	303
Carlow,	13	8	21	39	23	62	17	18	35	69	49	118
Cavan,	32	24	56	104	74	178	28	36	64	164	134	298
Clare,	22	16	38	88	54	142	32	31	63	142	101	243
Cork, E.R.	23	30	53	138	89	227	40	37	77	201	156	357
Cork, W.R.	19	27	46	82	49	131	29	26	55	130	102	232
Donegal,	52	51	103	134	127	261	41	34	75	227	212	439
Down,	65	48	113	201	145	346	38	57	95	304	250	554
Dublin City,	22	25	47	59	37	96	9	2	11	90	64	154
Dublin County,	16	18	34	43	27	70	13	7	20	72	52	124
Fermanagh,	11	16	27	104	79	183	11	14	25	126	109	235
Galway, E.R.	9	9	18	45	37	82	21	13	34	75	59	134
Galway, W.R.	22	15	37	64	65	129	29	32	61	115	112	227
Kerry,	11	17	28	81	45	126	14	28	42	106	90	196
Kildare,	13	11	24	68	38	106	16	33	49	97	82	179
Kilkenny,	19	17	36	89	74	163	38	40	78	146	131	277
King's,	10	20	30	63	58	121	18	19	37	91	97	188
Leitrim,	22	18	40	73	52	125	12	18	30	107	88	195
Limerick,	22	21	43	98	69	167	28	26	54	148	116	264
Londonderry,	51	31	82	136	97	233	30	21	51	217	149	366
Longford,	14	11	25	50	54	104	13	22	35	77	87	164
Louth,	17	23	40	60	32	92	14	10	24	91	65	156
Mayo,	21	25	46	77	79	156	34	42	76	132	146	278
Meath,	21	16	37	84	69	153	42	25	67	147	110	257
Monaghan,	26	35	61	82	83	165	21	20	41	129	138	267
Queen's,	7	10	17	60	53	113	23	16	39	90	79	169
Roscommon,	12	13	25	79	42	121	29	19	48	120	74	194
Sligo,	27	23	50	43	45	88	18	16	34	88	84	172
Tipperary, N.R.	24	17	41	62	48	110	29	21	50	115	86	201
Tipperary, S.R.	22	14	36	84	53	137	20	19	39	126	86	212
Tyrone,	46	31	77	160	132	292	32	44	76	238	207	445
Waterford,	15	23	38	56	32	88	35	21	56	106	76	182
Westmeath,	16	16	32	57	47	104	25	24	49	98	87	185
Wexford,	36	32	68	105	79	184	36	38	74	177	149	326
Wicklow,	17	14	31	63	40	103	20	18	38	100	72	172
Total,	866	785	1,651	3,148	2,321	5,469	945	926	1,871	4,959	4,032	8,991

No. 3.—Return of the Number of Lunatics, Idiots, and Epileptics in Union Workhouses in Ireland, on 31st March, 1861.

Name of Union.	Lunatics.			Idiots and Imbeciles.			Epileptics.			Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Abbeyleix,	1	2	3	2	7	9	2	4	6	5	13	18
Antrim,	–	7	7	1	–	1	–	–	–	1	7	8
Ardee,	1	4	5	6	3	9	–	5	5	7	12	19
Armagh,	5	4	9	4	2	6	1	2	3	10	8	18
Athlone,	–	–	–	2	2	4	–	4	4	2	6	8
Athy,	–	–	–	8	8	16	1	–	1	9	8	17
Bailieboro',	1	1	2	–	3	3	2	4	6	3	8	11
Ballina,	2	1	3	4	1	5	1	4	5	7	6	13
Ballinasloe,	–	–	–	3	2	5	1	4	5	4	6	10
Ballinrobe,	1	1	2	1	2	3	1	1	2	3	4	7
Ballycastle,	–	–	–	4	8	12	1	2	3	5	10	15
Ballymahon,	–	–	–	4	3	7	1	4	5	5	7	12
Ballymena,	–	4	4	2	4	6	1	1	2	3	9	12
Ballymoney,	2	–	2	3	3	6	1	1	2	6	4	10
Ballyshannon,	–	1	1	–	1	1	2	–	2	2	2	4
Ballyvaughan,	–	1	1	–	–	–	1	2	3	1	3	4
Balrothery,	1	2	3	–	1	1	2	2	4	3	5	8
Baltinglass,	1	1	2	1	3	4	3	4	7	5	8	13
Banbridge,	2	2	4	4	4	8	3	4	7	9	10	19
Bandon,	–	–	–	–	3	3	1	–	1	1	3	4
Bantry,	–	–	–	3	5	8	–	–	–	3	5	8
Bawnboy,	1	–	1	2	4	6	–	1	1	3	5	8
Belfast,	29	46	75	3	6	9	18	21	39	50	73	123
Belmullet,	–	3	3	3	–	3	–	3	3	3	6	9
Borrisokane,	1	1	2	2	–	2	–	2	2	3	3	6
Boyle,	–	1	1	6	4	10	1	2	3	7	7	14
Caherciveen,	–	–	–	–	1	1	3	–	3	3	1	4
Callan,	1	1	2	2	5	7	4	4	8	7	10	17
Carlow,	–	–	–	7	7	14	1	5	6	8	12	20
Carrickmacross,	1	4	5	–	2	2	1	3	4	2	9	11
Carrick-on-Shannon,	–	1	1	–	2	2	1	2	3	1	5	6
Carrick-on-Suir,	–	5	5	4	5	9	–	4	4	4	14	18
Cashel,	–	–	–	9	7	16	1	7	8	10	14	24
Castlebar,	–	–	–	2	1	3	3	6	9	5	7	12
Castleblayney,	–	4	4	1	1	2	1	4	5	2	9	11
Castlecomer,	–	2	2	–	1	1	–	–	–	–	3	3
Castlederg,	–	–	–	1	3	4	1	1	2	2	4	6
Castlerea,	–	3	3	1	3	3	2	8	10	3	13	16
Castletown,	1	1	2	1	–	1	1	3	4	3	4	7
Cavan,	1	8	9	4	7	11	2	1	3	7	16	23
Celbridge,	1	2	3	2	1	3	3	1	4	6	4	10
Claremorris,	–	–	–	1	4	5	5	2	7	6	6	12
Clifden,	1	2	3	–	–	–	2	4	6	3	6	9
Clogheen,	–	3	3	2	5	7	1	2	3	3	10	13
Clogher,	–	2	2	3	2	5	2	1	3	5	5	10
Clonakilty,	1	2	3	1	3	4	6	1	7	8	6	14
Clones,	–	–	–	–	–	–	1	4	5	1	4	5
Clonmel,	2	9	11	7	2	9	1	5	6	10	16	26
Coleraine,	5	1	6	3	9	12	2	1	3	10	11	21
Cookstown,	–	–	–	1	9	10	2	2	4	3	11	14
Cootehill,	–	4	4	3	2	5	1	4	5	4	10	14
Cork,	4	17	21	6	15	21	6	15	21	16	47	63
Corrofin,	–	1	1	2	1	3	–	1	1	2	3	5
Croom,	–	–	–	5	5	10	–	3	3	5	8	13
Delvin,	–	2	2	1	1	2	3	1	4	4	4	8
Dingle,	–	3	3	–	–	–	–	2	2	–	5	5
Donaghmore,	–	1	1	1	–	1	–	1	1	1	2	3
Donegal,	–	–	–	1	4	5	1	2	3	2	6	8
Downpatrick,	1	2	3	5	4	9	3	4	7	9	10	19
Drogheda,	4	4	8	4	6	10	4	2	6	12	12	24
Dromore, West,	–	1	1	3	1	4	–	2	2	3	4	7
Dublin, North,	3	31	34	3	–	3	18	38	56	24	69	93
Dublin, South,	12	19	31	37	16	53	23	45	68	72	80	152
Dundalk,	2	2	4	4	7	11	–	3	3	6	12	18
Dunfanaghy,	–	–	–	1	1	2	1	1	2	2	2	4
Dungannon,	–	2	2	2	6	8	–	1	1	2	9	11
Dungarvan,	–	–	–	3	4	7	3	1	4	6	5	11
Dunmanway,	1	1	2	–	–	–	–	1	1	1	2	3
Dunshaughlin,	1	2	3	–	2	2	–	1	1	1	5	6
Edenderry,	3	6	9	4	2	6	4	6	10	11	14	25
Ennis,	1	–	1	4	7	11	2	1	3	7	8	15
Enniscorthy,	2	2	4	7	8	15	5	5	10	14	15	29
Enniskillen,	2	2	4	3	2	5	2	3	5	7	7	14
Ennistymon,	–	2	2	2	2	4	1	7	8	3	11	14
Fermoy,	–	–	–	4	3	7	–	–	–	4	3	7
Galway,	–	1	1	4	1	5	2	3	5	6	5	11
Glennamaddy,	1	–	1	3	1	4	2	3	5	6	4	10

No. 3.—Return of the Number of Lunatics, Idiots, and Epileptics in Workhouses in Ireland—*con.*

Name of Union.	Lunatics.			Idiots and Imbeciles.			Epileptics.			Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Glenties,	–	2	2	4	3	7	–	–	–	4	5	9
Glin,	–	1	1	2	–	2	–	2	2	2	3	5
Gorey,	–	1	1	8	1	9	2	2	4	10	4	14
Gort,	–	–	–	2	–	2	–	–	–	2	–	2
Gortin,	–	–	–	3	2	5	–	1	1	3	3	6
Granard,	–	–	–	5	5	10	–	1	1	5	6	11
Inishowen,	3	10	13	5	4	9	1	–	1	9	14	23
Kanturk,	5	4	9	–	5	5	4	3	7	9	12	21
Kells,	–	–	–	7	4	11	–	9	9	7	13	20
Kenmare,	2	1	3	–	–	–	–	–	–	2	1	3
Kilkeel,	1	–	1	2	2	4	–	1	1	3	3	6
Kilkenny,	13	20	33	–	8	8	–	14	14	13	42	55
Killadysart,	–	1	1	2	2	4	2	1	3	4	4	8
Killala,	–	–	–	1	2	3	–	2	2	1	4	5
Killarney,	–	–	–	6	3	9	1	4	5	7	7	14
Kilmacthomas,	–	–	–	1	–	1	1	5	6	2	5	7
Kilmallock,	–	5	5	4	5	9	3	8	11	7	18	25
Kilrush,	1	2	3	5	4	9	7	4	11	13	10	23
Kinsale,	–	–	–	–	1	1	–	1	1	–	2	2
Larne,	–	4	4	4	11	15	2	3	5	6	18	24
Letterkenny,	1	–	1	1	1	2	1	–	1	3	1	4
Limerick,	9	22	31	11	18	29	3	9	12	23	49	72
Lisburn,	2	3	5	8	4	12	2	3	5	12	10	22
Lismore,	–	–	–	1	2	3	–	4	4	1	6	7
Lisnaskea,	–	2	2	–	–	–	–	3	3	–	5	5
Listowel,	–	–	–	1	–	1	1	4	5	2	4	6
Londonderry,	13	14	27	6	4	10	2	2	4	21	20	41
Longford,	3	2	5	4	2	6	2	1	3	9	5	14
Loughrea,	–	–	–	–	–	–	–	1	1	–	1	1
Lowtherstown,	–	–	–	2	3	5	1	1	2	3	4	7
Lurgan,	6	13	19	1	2	3	3	4	7	10	19	29
Macroom,	1	2	3	2	1	3	1	3	4	4	6	10
Magherafelt,	1	3	4	2	1	3	1	2	3	4	6	10
Mallow,	–	1	1	2	2	4	–	1	1	2	4	6
Manorhamilton,	–	–	–	1	1	2	–	–	–	1	1	2
Midleton,	2	1	3	1	5	6	5	–	5	8	6	14
Milford,	–	1	1	2	5	7	2	2	4	4	8	12
Millstreet,	–	–	–	–	1	1	3	1	4	3	2	5
Mitchelstown,	–	1	1	1	2	3	1	1	2	2	4	6
Mohill,	1	1	2	3	–	3	–	4	4	4	5	9
Monaghan,	2	–	2	3	3	6	1	5	6	6	8	14
Mount Bellew,	–	1	1	1	1	2	1	2	3	2	4	6
Mountmellick,	–	1	1	3	1	4	2	3	5	5	5	10
Mullingar,	3	2	5	3	4	7	6	6	12	12	12	24
Naas,	1	5	6	9	13	22	4	7	11	14	25	39
Navan,	–	1	1	1	1	2	–	1	1	1	3	4
Nenagh,	1	2	3	3	1	4	5	1	6	9	4	13
Newcastle,	–	–	–	5	10	15	1	5	6	6	15	21
Newport,	–	–	–	2	1	3	1	1	2	3	2	5
New Ross,	–	–	–	6	13	19	4	1	5	10	14	24
Newry,	6	4	10	5	20	25	–	8	8	11	32	43
Newtownards,	1	5	6	11	11	22	2	3	5	14	19	33
Newtownlimavady,	–	–	–	2	3	5	–	–	–	2	3	5
Oldcastle,	–	2	2	2	1	3	–	8	8	2	11	13
Omagh,	–	–	–	3	–	3	1	3	4	4	3	7
Oughterard,	–	1	1	–	1	1	1	3	4	1	5	6
Parsonstown,	–	1	1	3	3	6	–	3	3	3	7	10
Portumna,	–	–	–	–	–	–	–	2	2	–	2	2
Rathdown,	3	14	17	5	3	8	4	3	7	12	20	32
Rathdrum,	–	4	4	6	6	12	2	2	4	8	12	20
Rathkeale,	–	–	–	2	4	6	2	2	4	4	6	10
Roscommon,	1	2	3	1	10	11	2	1	3	4	13	17
Roscrea,	–	5	5	1	3	4	5	1	6	6	9	15
Scarriff,	–	–	–	1	1	2	–	2	2	1	3	4
Shillelagh,	1	–	1	–	2	2	2	–	2	3	2	5
Skibbereen,	–	–	–	2	1	3	4	3	7	6	4	10
Skull,	1	–	1	1	1	2	2	3	5	4	4	8
Sligo,	1	5	6	4	11	15	2	5	7	7	21	28
Strabane,	2	7	9	–	–	–	–	1	1	2	8	10
Stranorlar,	–	1	1	1	–	1	1	–	1	2	1	3
Strokestown,	–	–	–	2	3	5	2	4	6	4	7	11
Swineford,	–	1	1	–	4	4	–	6	6	–	11	11
Thomastown,	1	1	2	–	–	–	2	3	5	3	4	7
Thurles,	–	–	–	2	1	3	4	10	14	6	11	17
Tipperary,	2	5	7	5	5	10	1	1	2	8	11	19
Tobercurry,	–	2	2	1	3	4	1	2	3	2	7	9
Tralee,	–	–	–	–	7	7	1	1	2	1	8	9
Trim,	–	5	5	–	4	4	1	1	2	1	10	11
Tuam,	–	–	–	2	2	4	1	1	2	3	3	6
Tulla,	–	–	–	2	7	9	3	6	9	5	13	18
Tullamore,	–	1	1	4	5	9	2	12	14	6	18	24
Urlingford,	–	–	–	2	2	4	–	3	3	2	5	7
Waterford,	1	6	7	14	6	20	6	11	17	21	23	44
Westport,	–	1	1	1	1	2	–	4	4	1	6	7
Wexford,	–	4	4	2	–	2	3	4	7	5	8	13
Youghal,	–	–	–	1	1	2	1	4	5	2	5	7
Total,	190	445	635	468	552	1,020	307	572	879	965	1,569	2,534

APPENDIX B.

No. 1.—Table showing the Number of Patients who were in the District Asylums on the 31st March, 1859; also the Number of Admissions, Discharges, Escapes, and Deaths, during the Two Years ending 31st March, 1861.

Asylums.	Patients in Asylum on 31st March, 1859.			Patients Admitted during Year ended 31st March, 1860.			Total No. of Patients in Asylum during Year ended 31st March, 1860.			Patients Discharged during Year ended 31st March, 1860.										Patients Escaped during year ending 31st March, 1860.			Deaths during Year ended 31st March, 1860.									Total Discharged, Died, and Escaped, during Year ended 31st March, 1860.			Number remaining in Asylum on 31st March, 1860.		
										Recovered.			Improved.			Unimproved.			Total Discharged.				Cause.						Total Deaths.								
																							Natural.			Suicidal and Accidental.											
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	70	68	138	36	25	61	106	93	199	14	13	27	11	5	16	1	–	1	26	18	44	–	–	–	8	3	11	–	–	–	8	3	11	34	21	55	72	72	144
Ballinasloe,	170	151	321	48	44	92	218	195	413	22	25	47	6	5	11	1	–	1	29	30	59	–	–	–	13	9	22	1	–	1	14	9	23	43	39	82	175	156	331
Belfast,	198	159	357	51	69	120	249	228	477	34	41	75	9	13	22	–	–	–	43	54	97	1	–	1	17	8	25	–	–	–	17	8	25	61	62	123	188	166	354
Carlow,	108	93	201	17	22	39	125	115	240	4	10	14	2	4	6	–	–	–	6	14	20	1	–	1	8	10	18	–	–	–	8	10	18	15	24	39	110	91	201
Clonmel,	71	70	141	9	16	25	80	86	166	3	9	12	1	2	3	–	–	–	4	11	15	–	–	–	4	8	12	–	–	–	4	8	12	8	19	27	72	67	139
Cork,	234	244	478	80	106	186	314	350	664	55	69	124	3	1	4	1	1	2	59	71	130	–	1	1	31	40	71	2	–	2	33	40	73	92	112	204	222	238	460
Kilkenny,	75	71	146	18	16	34	93	87	180	1	5	6	3	3	6	7	5	12	11	13	24	–	–	–	–	4	4	1	–	1	1	4	5	12	17	29	81	70	151
Killarney,	106	68	174	19	33	52	125	101	226	9	10	19	2	2	4	2	4	6	13	16	29	–	–	–	4	8	12	–	–	–	4	8	12	17	24	41	108	77	185
Limerick,	164	173	337	53	40	93	217	213	430	10	12	22	8	3	11	4	6	10	22	21	43	–	–	–	10	10	20	–	1	1	10	11	21	32	32	64	185	181	366
Londonderry,	112	102	214	27	32	59	139	134	273	10	13	23	5	10	15	1	2	3	16	25	41	–	–	–	4	2	6	–	–	–	4	2	6	20	27	47	119	107	226
Maryborough,	98	76	174	14	22	36	112	98	210	5	9	14	1	5	6	–	3	3	6	17	23	–	–	–	8	2	10	–	2	2	8	4	12	14	21	35	98	77	175
Mullingar,	109	118	227	38	32	70	147	150	297	25	18	43	1	–	1	–	–	–	26	18	44	–	–	–	12	11	23	–	–	–	12	11	23	38	29	67	109	121	230
Omagh,	127	120	247	65	72	137	192	192	384	26	24	50	7	8	15	9	11	20	42	43	85	4	4	8	10	15	25	–	–	–	10	15	25	56	62	118	136	130	266
Richmond,	298	354	652	97	93	190	395	447	842	45	59	104	5	13	18	6	4	10	56	76	132	3	–	3	39	21	60	–	–	–	39	21	60	98	97	195	297	350	647
Sligo,	86	78	164	42	30	72	128	108	236	20	20	40	3	–	3	1	2	3	24	22	46	–	–	–	13	5	18	–	–	–	13	5	18	37	27	64	91	81	172
Waterford,	61	58	119	23	24	47	84	82	166	9	15	24	2	5	7	4	–	4	15	20	35	–	–	–	1	2	3	–	–	–	1	2	3	16	22	38	68	60	128
Total,	2,087	2,003	4,090	637	676	1,313	2,724	2,679	5,403	292	352	644	69	79	148	37	38	75	398	469	867	9	5	14	182	158	340	4	3	7	186	161	347	593	635	1,228	2,131	2,044	4,175

Asylums.	Patients in Asylum on 31st March, 1860.			Patients Admitted during Year ended 31st March, 1861.			Total No. of Patients in Asylum during Year ended 31st March, 1861.			Patients Discharged during Year ended 31st March, 1861.										Patients Escaped during year ending 31st March, 1861.			Deaths during Year ended 31st March, 1861.									Total Discharged, Died, and Escaped, during Year ended 31st March, 1861.			Number remaining in Asylum on 31st March, 1861.		
										Recovered.			Improved.			Unimproved.			Total Discharged.				Cause.						Total Deaths.								
																							Natural.			Suicidal and Accidental.											
1861.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	72	72	144	22	7	29	94	79	173	8	2	10	6	3	9	2	–	2	16	5	21	1	–	1	6	1	7	–	–	–	6	1	7	23	6	29	71	73	144
Ballinasloe,	175	156	331	42	34	76	217	190	407	20	15	35	2	3	5	–	–	–	22	18	40	1	–	1	19	13	32	–	1	1	19	14	33	42	32	74	175	158	333
Belfast,	188	166	354	51	51	102	239	217	456	18	29	47	14	17	31	–	–	–	32	46	78	–	–	–	14	7	21	–	1	1	14	8	22	46	54	100	193	163	356
Carlow,	110	91	201	19	21	40	129	112	241	8	9	17	1	1	2	–	–	–	9	10	19	1	–	1	11	11	22	–	–	–	11	11	22	21	21	42	108	91	199
Clonmel,	72	67	139	2	10	12	74	77	151	3	3	6	–	1	1	–	–	–	3	4	7	–	–	–	1	3	4	–	–	–	1	3	4	4	7	11	70	70	140
Cork,	222	238	460	95	101	196	317	339	656	53	64	117	1	5	6	1	1	2	55	70	125	–	1	1	25	22	47	1	–	1	26	22	48	81	93	174	236	246	482
Kilkenny,	81	70	151	18	17	35	99	87	186	2	7	9	3	3	6	1	–	1	6	10	16	–	–	–	10	3	13	–	–	–	10	3	13	16	13	29	83	74	157
Killarney,	108	77	185	24	24	48	132	101	233	7	7	14	6	2	8	2	–	2	15	9	24	–	–	–	4	9	13	–	–	–	4	9	13	19	18	37	113	83	196
Limerick,	185	181	366	52	73	125	237	254	491	29	32	61	7	9	16	3	3	6	39	44	83	–	–	–	10	8	18	–	1	1	10	9	19	49	53	102	188	201	389
Londonderry,	119	107	226	20	33	53	139	140	279	9	13	22	4	14	18	–	–	–	13	27	40	–	–	–	8	5	13	–	–	–	8	5	13	21	32	53	118	108	226
Maryborough,	98	77	175	20	32	52	118	109	227	6	8	14	4	4	8	1	1	2	11	13	24	–	–	–	9	9	18	–	–	–	9	9	18	20	22	42	98	87	185
Mullingar,	109	121	230	39	44	83	148	165	313	20	13	33	–	–	–	1	–	1	21	13	34	–	–	–	14	11	25	–	–	–	14	11	25	35	24	59	113	141	254
Omagh,	136	130	266	75	57	132	211	187	398	25	18	43	3	6	9	12	11	23	40	35	75	14	5	19	14	15	29	–	–	–	14	15	29	68	55	123	143	132	275
Richmond,	297	350	647	69	95	164	366	445	811	22	48	70	6	8	14	2	4	6	30	60	90	4	1	5	35	24	59	–	–	–	35	24	59	69	85	154	297	360	657
Sligo,	91	81	172	32	25	57	123	106	229	15	16	31	2	–	2	4	–	4	21	16	37	3	–	3	6	8	14	–	–	–	6	8	14	30	24	54	93	82	175
Waterford,	68	60	128	25	33	58	93	93	186	17	11	28	3	12	15	1	2	3	21	25	46	–	–	–	6	13	19	–	–	–	6	13	19	27	38	65	66	55	121
Total,	2,131	2,044	4,175	605	657	1,262	2,736	2,701	5,437	262	295	557	62	88	150	30	22	52	354	405	759	24	7	31	192	163	355	1	2	3	193	165	358	571	577	1,148	2,165	2,124	4,289

No. 2.—TABLE showing the Ages of Patients Admitted, and of those Discharged Recovered, during the Two Years ending 31st March, 1860, and 1861.

| ASYLUMS. | ADMITTED. | | |

No. 3.—Table showing the duration of Disease previous to Admission in those Discharged Recovered, during the Two Years ending 31st March, 1860, and 1861.

Asylums.	Months.									Years.																								Total Discharged Recovered.		
	Under 3.			3 to 6.			6 to 9.			Under 1.			1 to 2.			2 to 3.			3 to 4.			4 to 5.			5 to 6.			6 to 8.			8 to 10. and upwards.			Not specified.					
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	5	7	12	1	1	2	1	1	2	–	–	–	–	–	–	2	1	3	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	4	2	6	14	13	27
Ballinasloe,	19	13	32	2	7	9	1	2	3	–	3	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	22	25	47
Belfast,	23	32	55	5	6	11	1	1	2	2	–	2	1	–	1	1	1	2	–	1	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	34	41	75
Carlow,	–	3	3	–	2	2	1	–	1	–	2	2	–	1	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	4	4	10	14
Clonmel,	1	1	2	1	3	4	–	–	–	–	2	2	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	3	9	12
Cork,	41	53	94	3	1	4	2	2	4	1	–	1	2	1	3	–	–	–	–	1	1	–	–	–	1	1	2	–	1	1	1	1	2	4	8	12	55	69	124
Kilkenny,	1	3	4	–	–	–	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5	6
Killarney,	4	8	12	–	–	–	2	–	2	–	1	1	2	–	2	1	–	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	9	10	19
Limerick,	5	6	11	2	2	4	1	1	2	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	4	10	12	22
Londonderry,	8	13	21	–	–	–	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10	13	23
Maryborough,	–	3	3	2	1	3	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	1	1	2	2	4	5	9	14
Mullingar,	16	9	25	5	3	8	1	1	2	2	3	5	–	–	–	–	1	1	–	–	–	–	–	–	1	1	2	–	–	–	–	–	–	–	–	–	25	18	43
Omagh,	13	11	24	2	1	3	1	1	2	–	–	–	1	1	2	–	1	1	2	–	2	1	1	2	1	2	3	–	–	–	–	1	1	5	5	10	26	24	50
Richmond,	21	29	50	7	3	10	2	2	4	1	–	1	1	3	4	–	3	3	–	3	3	–	–	–	–	1	1	1	–	1	–	1	1	12	14	26	45	59	104
Sligo,	11	14	25	3	1	4	–	1	1	–	–	–	1	1	2	1	–	1	–	–	–	1	1	2	–	–	–	–	–	–	–	1	1	3	1	4	20	20	40
Waterford,	4	10	14	1	1	2	–	1	1	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	2	5	9	15	24
Total,	172	215	387	34	32	66	15	15	30	8	13	21	9	7	16	6	8	14	3	6	9	2	2	4	3	6	9	1	2	3	2	5	7	37	41	78	292	352	644
1861.																																							
Armagh,	2	1	3	1	–	1	3	1	4	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	8	2	10
Ballinasloe,	14	10	24	2	5	7	3	–	3	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	15	35
Belfast,	12	21	33	2	4	6	2	2	4	–	–	–	1	1	2	–	1	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	18	29	47
Carlow,	1	4	5	1	–	1	–	–	–	1	1	2	–	1	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	3	7	8	9	17
Clonmel,	1	1	2	1	–	1	–	–	–	1	2	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	6
Cork,	49	51	100	3	3	6	–	2	2	–	3	3	–	3	3	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	1	1	53	64	117
Kilkenny,	–	5	5	–	2	2	2	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	7	9
Killarney,	5	5	10	2	1	3	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7	7	14
Limerick,	14	13	27	3	5	8	2	4	6	1	3	4	1	1	2	1	–	1	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	6	5	11	29	32	61
Londonderry,	7	9	16	2	2	4	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	13	22
Maryborough,	2	3	5	–	–	–	–	–	–	–	1	1	1	–	1	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	6	6	8	14
Mullingar,	7	9	16	1	3	4	2	–	2	4	1	5	–	–	–	2	–	2	3	–	3	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	20	13	33
Omagh,	12	5	17	–	1	1	1	1	2	2	1	3	1	–	1	1	1	2	–	1	1	–	2	2	–	–	–	1	–	1	–	1	1	7	5	12	25	18	43
Richmond,	11	23	34	–	4	4	1	3	4	–	–	–	2	4	6	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	8	12	20	22	48	70
Sligo,	9	13	22	2	1	3	–	1	1	–	1	1	2	–	2	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	15	16	31
Waterford,	8	8	16	1	–	1	–	–	–	2	1	3	–	1	1	–	1	1	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	4	–	4	17	11	28
Total,	154	181	335	21	31	52	16	16	32	12	14	26	9	12	21	7	5	12	5	2	7	1	3	4	1	–	1	1	–	1	2	2	4	33	29	62	262	295	557

No. 4.—Table showing the Length of Residence in Asylums, of those Discharged Recovered and Improved, during the Two Years ending 31st March, 1860, and 1861.

RECOVERED.

Asylums.	Months.															Years.																											Total Discharged Recovered.		
	Under 4.			4 to 6.			6 to 8.			8 to 12.			12 to 18.			Under 2.			Under 3.			Under 4.			Under 5.			Under 6.			Under 7.			Under 8.			Under 9.			Under 10.			10 & upwards.					
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	5	9	14	1	1	2	2	–	2	1	–	1	–	–	–	2	–	2	1	1	2	1	1	2	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	1	–	1	14	13	27
Ballinasloe,	16	9	25	2	8	10	1	1	2	1	1	2	1	1	2	1	2	3	–	–	–	–	–	–	–	3	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	22	25	47
Belfast,	12	19	31	6	6	12	4	6	10	2	4	6	–	–	–	4	2	6	2	2	4	1	1	2	–	–	–	–	–	–	1	–	1	1	–	1	–	1	1	1	1	–	1	–	–	–	34	41	75
Carlow,	–	5	5	1	1	2	1	–	1	–	1	1	1	1	2	–	1	1	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	10	14
Clonmel,	1	2	3	–	3	3	2	1	3	–	1	1	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	9	12
Cork,	25	33	58	8	10	18	6	4	10	5	7	12	2	8	10	2	1	3	4	1	5	2	2	4	–	–	–	–	1	1	–	–	–	–	–	–	–	1	1	2	–	–	–	1	1	2	55	69	124
Kilkenny,	1	3	4	–	–	–	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5	6
Killarney,	4	4	8	–	3	3	1	1	2	1	2	3	2	–	2	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	10	19
Limerick,	8	5	13	–	2	2	1	–	1	–	–	–	–	2	2	–	2	2	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10	12	22
Londonderry,	6	3	9	–	1	1	2	1	3	2	3	5	–	4	4	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10	13	23
Maryborough,	2	1	8	–	–	–	3	1	4	–	3	3	–	1	1	–	–	–	–	–	–	1	1	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5	9	14
Mullingar,	14	4	18	3	6	9	2	1	3	–	1	1	2	2	4	–	1	1	2	1	3	2	2	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	25	18	43
Omagh,	18	13	31	2	4	6	1	2	3	4	1	5	1	4	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	26	24	50
Richmond,	14	18	32	4	9	13	3	2	5	7	5	12	3	7	10	1	5	6	2	–	2	–	1	1	5	3	8	3	2	5	–	1	1	–	–	–	–	2	2	3	4	7	–	–	–	45	59	104
Sligo,	6	9	15	4	3	7	4	1	5	2	2	4	–	–	–	–	2	2	2	1	3	1	–	1	1	1	2	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	20	40
Waterford,	3	5	8	3	2	5	1	2	3	1	3	4	–	2	2	–	–	–	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	15	24
Total,	135	142	277	34	59	93	34	24	58	26	35	61	12	34	46	10	17	27	17	9	26	7	8	15	6	10	16	3	3	6	1	2	3	1	–	1	–	1	1	1	1	4	8	2	1	3	292	352	644

IMPROVED.

Asylums.	Months.															Years.																											Total Discharged Improved.			Total Discharged Recovered and Improved.		
	Under 4.			4 to 6.			6 to 8.			8 to 12.			12 to 18.			Under 2.			Under 3.			Under 4.			Under 5.			Under 6.			Under 7.			Under 8.			Under 9.			Under 10.			10 & upwards.								
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	5	2	7	–	–	–	–	–	–	–	–	–	1	–	1	1	–	1	–	–	–	–	1	1	1	1	2	–	–	–	–	–	–	–	1	1	–	–	–	–	–	3	–	3	11	5	16	25	18	43
Ballinasloe,	3	1	4	2	1	3	–	–	–	1	–	1	–	2	2	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	5	11	28	30	58
Belfast,	4	2	6	1	1	2	–	2	2	1	1	2	–	–	–	3	5	8	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	13	22	43	54	97
Carlow,	1	–	1	–	1	1	–	–	–	1	1	1	–	1	1	–	1	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	4	6	6	14	20
Clonmel,	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	1	2	3	4	11	15
Cork,	1	–	1	1	–	1	–	–	–	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	1	4	58	70	128
Kilkenny,	2	–	2	–	–	–	–	–	–	1	1	–	–	–	–	1	–	1	–	–	–	–	–	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	6	4	8	12
Killarney,	1	–	1	–	–	–	–	1	1	–	–	–	1	–	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2	4	11	12	23
Limerick,	4	1	5	1	–	1	2	–	2	–	1	1	–	1	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8	3	11	18	15	33
Londonderry,	1	3	4	–	–	–	–	1	1	3	1	4	1	–	1	–	3	3	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5	10	15	15	23	38
Maryborough,	–	1	1	1	1	2	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5	6	6	14	20
Mullingar,	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	26	18	44
Omagh,	3	2	5	–	3	3	1	–	1	2	3	5	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	7	8	15	33	32	65
Richmond,	2	2	4	–	2	2	–	–	–	1	1	1	1	2	1	–	1	–	3	3	–	–	–	–	1	3	4	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	5	13	18	50	72	122
Sligo,	1	–	1	–	–	–	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	3	23	20	43
Waterford,	1	1	2	–	2	2	1	1	2	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	5	7	11	20	31
Total,	30	15	45	7	11	18	5	6	11	8	10	18	5	6	11	6	10	16	1	7	8	2	5	7	2	6	8	–	–	–	–	1	1	–	1	1	–	–	–	–	1	1	3	–	3	69	79	148	361	431	792

No. 4.—Table showing the Length of Residence in Asylums, of those Discharged Recovered and Improved, during the Two Years ending 31st March, 1860, and 1861—*con.*

RECOVERED.

Asylums.	Months.															Years.																													Total Discharged Recovered.		
	Under 4.			4 to 6.			6 to 8.			8 to 12.			12 to 18.			Under 2.			Under 3.			Under 4.			Under 5.			Under 6.			Under 7.			Under 8.			Under 9.			Under 10.			10 & upwards.					
1861.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	3	–	3	2	–	2	–	1	1	–	–	–	2	1	3	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8	2	10
Ballinasloe,	9	7	16	2	–	2	2	3	5	4	2	6	–	2	2	–	–	–	1	1	2	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	20	15	35
Belfast,	6	6	12	1	3	4	2	1	3	3	6	9	2	2	4	2	6	8	–	3	3	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	1	–	1	1	1	2	–	–	18	29	47
Carlow,	2	4	6	–	1	1	2	1	3	1	2	3	–	–	–	3	1	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8	9	17
Clonmel,	–	1	1	1	1	2	–	–	–	1	1	2	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	6
Cork,	29	28	57	10	8	18	2	4	6	4	5	9	2	5	7	2	4	6	1	3	4	–	2	2	1	2	3	–	–	–	1	1	2	–	–	–	–	1	1	–	1	1	1	–	1	53	64	117
Kilkenny,	1	–	1	–	4	4	1	1	2	–	–	–	–	–	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	7	9
Killarney,	4	1	5	1	1	2	–	2	2	1	2	3	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	7	7	14
Limerick,	13	14	27	8	5	13	4	5	9	–	2	2	1	3	4	–	1	1	1	–	1	1	1	2	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	29	32	61
Londonderry,	4	4	8	1	1	2	2	1	3	–	3	3	–	2	2	2	2	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	9	13	22
Maryborough,	3	3	6	–	–	–	2	–	2	1	2	3	–	–	–	–	1	1	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	8	14
Mullingar,	8	7	15	4	2	6	2	–	2	3	1	4	–	2	2	–	–	–	1	1	2	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	13	33
Omagh,	13	9	22	5	1	6	1	1	2	–	2	2	5	1	6	–	1	1	–	–	–	–	3	3	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	25	18	43
Richmond,	7	21	28	–	5	5	3	4	7	5	6	11	–	–	–	3	5	8	–	1	1	1	1	2	2	2	4	–	–	–	–	–	–	1	1	2	–	1	1	–	1	1	–	–	–	22	48	70
Sligo,	6	7	13	2	2	4	3	4	7	–	2	2	2	1	3	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	15	16	31
Waterford,	9	–	9	4	3	7	1	2	3	1	3	4	2	2	4	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	17	11	28
Total,	117	112	229	41	37	78	27	30	57	24	39	63	17	21	38	14	23	37	5	11	16	4	8	12	6	6	12	–	1	1	1	1	2	1	1	2	1	2	3	1	3	4	3	–	3	262	295	557

IMPROVED.

Asylums.	Months.															Years.																													Total Discharged Improved.			Total Discharged Recovered and Improved.		
	Under 4.			4 to 6.			6 to 8.			8 to 12.			12 to 18.			Under 2.			Under 3.			Under 4.			Under 5.			Under 6.			Under 7.			Under 8.			Under 9.			Under 10.			10 & upwards.							
1861.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	2	–	2	–	–	–	1	–	1	–	2	2	2	–	2	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	6	3	9	14	5	19
Ballinasloe,	1	–	1	1	–	1	–	–	–	1	1	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	3	5	22	18	40
Belfast,	1	2	3	3	1	4	1	–	1	1	–	1	1	3	4	3	3	6	2	1	3	–	3	3	1	2	3	–	–	–	–	–	–	–	–	–	1	2	3	–	–	–	14	17	31	32	46	78
Carlow,	1	–	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	2	9	10	19
Clonmel,	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	3	4	7
Cork,	1	4	5	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	5	6	54	69	123
Kilkenny,	1	–	1	–	–	–	–	1	1	2	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	3	3	6	5	10	15
Killarney,	3	–	3	–	1	1	–	–	–	1	1	2	–	2	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	2	8	13	9	22
Limerick,	2	7	9	1	–	1	–	1	1	1	1	2	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	1	7	9	16	36	41	77
Londonderry,	1	1	2	1	1	2	–	–	–	2	2	1	–	1	–	2	2	1	4	5	–	1	1	–	–	–	–	–	–	–	–	1	1	–	–	–	2	2	–	–	–	–	4	14	18	13	27	40
Maryborough,	–	2	2	1	–	1	1	1	2	–	–	–	–	–	–	1	1	2	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	4	4	8	10	12	22
Mullingar,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20	13	33
Omagh,	1	3	4	1	–	1	–	–	–	1	–	1	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	3	6	9	28	24	52
Richmond,	1	5	6	2	1	3	2	–	2	1	–	1	–	–	–	–	–	–	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6	8	14	28	56	84
Sligo,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	2	17	16	33
Waterford,	3	7	10	–	1	1	–	2	2	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	3	12	15	20	23	43
Total,	19	31	50	10	6	16	5	5	10	6	9	15	7	9	16	4	7	11	4	7	11	–	4	4	2	3	5	1	–	1	1	1	2	1	1	2	–	1	1	1	4	5	1	–	1	62	88	150	324	383	707

No. 5.—Table showing Authority for Admission of Patients, and Number Admitted, during the Two Years ending 31st March, 1860, and 1861.

Asylums.	Ordinary Cases admitted by order of the Board.			Ordinary Cases admitted as urgent by the Physicians.			Dangerous Lunatics by Warrant of the Lord Lieutenant.			Lunatics charged with Offences by Warrant of the Lord Lieutenant.			Lunatics detained in default of security to keep the Peace by Warrant of the Lord Lieutenant.			Total Patients admitted during the Year.		
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	12	10	22	7	9	16	17	6	23	–	–	–	–	–	–	36	25	61
Ballinasloe,	19	19	38	2	–	2	26	25	51	1	–	1	–	–	–	48	44	92
Belfast,	23	43	66	13	10	23	15	16	31	–	–	–	–	–	–	51	69	120
Carlow,	9	12	21	1	1	2	6	9	15	1	–	1	–	–	–	17	22	39
Clonmel,	5	3	8	3	2	5	1	11	12	–	–	–	–	–	–	9	16	25
Cork,	4	15	19	63	75	138	11	13	24	2	2	4	–	1	1	80	106	186
Kilkenny,	–	7	7	5	2	7	11	7	18	1	–	1	1	–	1	18	16	34
Killarney,	10	18	28	6	14	20	2	1	3	1	–	1	–	–	–	19	33	52
Limerick,	7	3	10	24	27	51	22	9	31	–	1	1	–	–	–	53	40	93
Londonderry,	12	21	33	5	6	11	10	5	15	–	–	–	–	–	–	27	32	59
Maryborough,	5	14	19	–	1	1	9	7	16	–	–	–	–	–	–	14	22	36
Mullingar,	27	27	54	–	–	–	11	5	16	–	–	–	–	–	–	38	32	70
Omagh,	13	8	21	42	57	99	10	7	17	–	–	–	–	–	–	65	72	137
Richmond,	42	46	88	15	10	25	39	37	76	1	–	1	–	–	–	97	93	190
Sligo,	–	–	–	34	29	63	8	1	9	–	–	–	–	–	–	42	30	72
Waterford,	11	22	33	–	–	–	12	2	14	–	–	–	–	–	–	23	24	47
Total,	199	268	467	220	243	463	210	161	371	7	3	10	1	1	2	637	676	1,313
1861.																		
Armagh,	3	–	3	4	3	7	15	4	19	–	–	–	–	–	–	22	7	29
Ballinasloe,	18	19	37	1	1	2	22	14	36	1	–	1	–	–	–	42	34	76
Belfast,	21	30	51	15	14	29	15	7	22	–	–	–	–	–	–	51	51	102
Carlow,	10	15	25	–	–	–	8	6	14	1	–	1	–	–	–	19	21	40
Clonmel,	2	3	5	–	1	1	–	6	6	–	–	–	–	–	–	2	10	12
Cork,	14	24	38	56	60	116	20	12	32	3	4	7	2	1	3	95	101	196
Kilkenny,	2	4	6	2	1	3	14	11	25	–	–	–	–	1	1	18	17	35
Killarney,	7	10	17	11	12	23	6	2	8	–	–	–	–	–	–	24	24	48
Limerick,	2	14	16	40	48	88	10	11	21	–	–	–	–	–	–	52	73	125
Londonderry,	12	15	27	2	5	7	6	13	19	–	–	–	–	–	–	20	33	53
Maryborough,	8	25	33	–	–	–	12	7	19	–	–	–	–	–	–	20	32	52
Mullingar,	26	37	63	–	–	–	13	7	20	–	–	–	–	–	–	39	44	83
Omagh,	6	12	18	64	42	106	5	3	8	–	–	–	–	–	–	75	57	132
Richmond,	13	32	45	16	30	46	36	33	69	2	–	2	2	–	2	69	95	164
Sligo,	–	–	–	28	25	53	3	–	3	1	–	1	–	–	–	32	25	57
Waterford,	25	32	57	–	1	1	–	–	–	–	–	–	–	–	–	25	33	58
Total,	169	272	441	239	243	482	185	136	321	8	4	12	4	2	6	605	657	1,262

Note.—Urgent cases are admitted into the Belfast District Asylum on the order of three Governors.

No. 6.—Table showing the Cause of Death of Patients in Asylums during the two Years ending 31st March, 1860, and 1861.

Asylums.		Abdominal Affections.		Cerebral Affections.		Consumption and Disease of Lungs.		Disease of Heart.		Debility and Old Age.		Uterine Disease.		Scrofula.		Suicide and Accidental		Total Deaths in each year.	
		1860.	1861.	1860.	1861.	1860.	1861.	1860.	1861.	1860.	1861.	1860.	1861.	1860.	1861.	1860.	1861.	1860.	1861.
Armagh,	M.	1	1	3	1	2	1	–	–	2	3	–	–	–	–	–	–	8	6
	F.	1	–	1	–	1	1	–	–	–	–	–	–	–	–	–	–	3	1
Ballinasloe,	M.	4	2	4	7	2	3	–	–	3	4	–	–	–	3	1	–	14	19
	F.	–	–	1	2	2	7	–	–	5	5	–	–	1	–	–	–	9	14
Belfast,	M.	1	1	14	8	1	–	–	–	1	4	–	–	–	1	–	–	17	14
	F.	1	1	2	3	2	2	–	–	2	2	–	–	1	–	–	–	8	8
Carlow,	M.	2	3	4	2	1	6	–	–	–	–	1	–	–	–	–	–	8	11
	F.	2	2	2	1	6	6	–	–	–	1	–	1	–	–	–	–	10	11
Clonmel,	M.	–	–	1	–	–	–	–	–	3	1	–	–	–	–	–	–	4	1
	F.	–	–	2	1	5	2	–	–	1	–	–	–	–	–	–	–	8	3
Cork,	M.	10	12	11	9	7	3	–	–	3	–	–	–	–	1	2	1	33	26
	F.	11	4	6	5	11	4	2	–	4	5	–	–	6	4	–	–	40	22
Kilkenny,	M.	–	–	–	2	–	7	–	–	–	1	–	–	–	–	1	–	1	10
	F.	2	1	–	1	–	1	1	–	1	–	–	–	–	–	–	–	4	3
Killarney,	M.	1	1	1	2	–	1	–	–	2	–	–	–	–	–	–	–	4	4
	F.	4	2	1	2	1	2	2	–	–	2	–	–	–	1	–	–	8	9
Limerick,	M.	1	–	3	3	2	–	1	–	2	7	–	–	1	–	–	–	10	10
	F.	2	–	4	–	–	1	1	–	3	6	–	–	–	1	1	1	11	9
Londonderry,	M.	–	–	3	4	1	1	–	–	–	3	–	–	–	–	–	–	4	8
	F.	–	1	1	1	–	1	–	–	1	2	–	–	–	–	–	–	2	5
Maryborough,	M.	2	6	2	2	2	1	–	–	2	–	–	–	–	–	–	–	8	9
	F.	2	4	–	1	–	4	–	–	–	–	–	–	–	–	2	–	4	9
Mullingar,	M.	1	1	11	6	–	3	–	1	–	–	–	–	–	3	–	–	12	14
	F.	3	1	6	5	1	3	–	2	–	–	–	–	1	–	–	–	11	11
Omagh,	M.	1	4	2	9	4	–	–	–	3	1	–	–	–	–	–	–	10	14
	F.	–	3	1	5	7	1	–	–	5	6	–	–	2	–	–	–	15	15
Richmond,	M.	7	2	18	14	6	9	2	–	5	10	–	–	1	–	–	–	39	35
	F.	4	5	2	5	8	10	–	1	7	2	–	–	–	–	–	1	21	24
Sligo,	M.	2	1	8	3	1	2	–	–	2	–	–	–	–	–	–	–	13	6
	F.	–	2	–	–	–	3	–	–	5	3	–	–	–	–	–	–	5	8
Waterford,	M.	–	1	–	2	–	1	–	–	1	1	–	–	–	1	–	–	1	6
	F.	1	1	–	1	–	5	–	–	–	6	–	–	1	–	–	–	2	13
Total Number of Deaths in each year,	M.	33	35	85	74	29	38	3	1	29	35	1	–	2	9	4	1	186	193
	F.	33	27	29	33	44	53	6	3	34	40	–	1	12	6	3	2	161	165

No. 7.—Table showing the Number of Relapsed Cases admitted during the Two Years ending 31st March, 1860, and 1861.

Asylums.	In Asylum Once before.			In Asylum Twice before.			In Asylum Three times before.			In Asylum Four times before.			In Asylum Five times before.			In Asylum Six times before and upwards.			Total.		
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	6	3	9	3	–	3	2	–	2	–	–	–	–	–	–	–	–	–	11	3	14
Ballinasloe,	3	5	8	5	2	7	1	–	1	–	–	–	–	–	–	–	–	–	9	7	16
Belfast,	3	–	3	5	10	15	1	1	2	–	1	1	1	–	1	–	1	1	10	13	23
Carlow,	1	2	3	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	2	3	5
Clonmel,	1	1	2	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	1	3	4
Cork,	19	11	30	5	2	7	2	2	4	–	–	–	–	1	1	–	2	2	26	18	44
Kilkenny,	3	3	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	3	3	6
Killarney,	3	3	6	–	2	2	–	–	–	–	–	–	1	–	1	–	–	–	4	5	9
Limerick,	11	9	20	5	4	9	–	1	1	1	1	2	1	–	1	–	–	–	18	15	33
Londonderry,	2	3	5	3	–	3	–	–	–	–	–	–	–	–	–	–	–	–	5	3	8
Maryborough,	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	2
Mullingar,	5	6	11	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	6	7	13
Omagh,	7	9	16	2	4	6	2	2	4	–	1	1	1	1	2	–	2	2	12	19	31
Richmond,	1	2	3	2	–	2	3	–	3	–	–	–	–	–	–	–	–	–	6	2	8
Sligo,	4	1	5	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	4	2	6
Waterford,	8	3	11	1	1	2	–	1	1	1	–	1	–	–	–	–	–	–	10	5	15
Total,	78	62	140	33	29	62	11	8	19	2	3	5	4	2	6	–	5	5	128	109	237
1861.																					
Armagh,	5	2	7	–	2	2	1	–	1	–	–	–	–	–	–	–	–	–	6	4	10
Ballinasloe,	2	4	6	1	1	2	4	1	5	–	1	1	–	–	–	–	–	–	7	7	14
Belfast,	2	1	3	5	3	8	–	3	3	–	1	1	1	–	1	1	–	1	9	8	17
Carlow,	1	–	1	–	1	1	1	1	2	–	–	–	–	–	–	–	–	–	2	2	4
Clonmel,	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2
Cork,	18	13	31	3	3	6	1	–	1	1	–	1	–	–	–	1	1	2	24	17	41
Kilkenny,	2	–	2	–	2	2	–	1	1	–	–	–	–	–	–	–	–	–	2	3	5
Killarney,	3	4	7	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	4	4	8
Limerick,	9	11	20	3	6	9	1	3	4	1	–	1	–	1	1	–	–	–	14	21	35
Londonderry,	6	5	11	1	2	3	–	–	–	–	–	–	–	–	–	–	–	–	7	7	14
Maryborough,	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	2	2
Mullingar,	3	8	11	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	4	9	13
Omagh,	18	11	29	4	4	8	1	1	2	–	–	–	–	–	–	–	1	1	23	17	40
Richmond,	4	8	12	–	1	1	1	–	1	–	–	–	–	–	–	–	–	–	5	9	14
Sligo,	3	2	5	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	4	2	6
Waterford,	3	7	10	1	1	2	–	–	–	1	1	2	–	1	1	–	1	1	5	11	16
Total,	79	79	158	20	27	47	10	10	20	3	3	6	1	3	4	3	3	6	116	125	241

No. 8.—Table showing the Form of Disease in those admitted during the Two Years ended 31st March, 1860, and 1861.

Asylums.	Form of Disease.																					Total.		
	Mania.			Monomania.			Dementia.			Melancholia.			Imbecility and Epilepsy.			Idiocy.			Not specified					
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	30	18	48	–	–	–	–	1	1	6	6	12	–	–	–	–	–	–	–	–	–	36	25	61
Ballinasloe,	34	33	67	1	–	1	1	1	2	–	1	1	8	5	13	3	4	7	1	–	1	48	44	92
Belfast,	38	39	77	7	9	16	1	–	1	5	21	26	–	–	–	–	–	–	–	–	–	51	69	120
Carlow,	12	14	26	3	2	5	–	1	1	2	5	7	–	–	–	–	–	–	–	–	–	17	22	39
Clonmel,	7	10	17	–	–	–	1	5	6	1	1	2	–	–	–	–	–	–	–	–	–	9	16	25
Cork,	55	71	126	6	4	10	12	22	34	4	8	12	3	1	4	–	–	–	–	–	–	80	106	186
Kilkenny,	12	10	22	2	2	4	2	–	2	1	4	5	–	–	–	1	–	1	–	–	–	18	16	34
Killarney,	11	25	36	–	–	–	1	3	4	7	4	11	–	1	1	–	–	–	–	–	–	19	33	52
Limerick,	36	27	63	1	1	2	6	3	9	10	9	19	–	–	–	–	–	–	–	–	–	53	40	93
Londonderry,	21	27	48	–	2	2	3	1	4	3	1	4	–	1	1	–	–	–	–	–	–	27	32	59
Maryborough,	10	19	29	–	–	–	–	–	–	2	2	4	–	1	1	–	–	–	2	–	2	14	22	36
Mullingar,	28	22	50	2	1	3	1	2	3	5	7	12	2	–	2	–	–	–	–	–	–	38	32	70
Omagh,	45	51	96	–	–	–	3	1	4	15	19	34	1	–	1	1	1	2	–	–	–	65	72	137
Richmond,	66	59	125	4	–	4	2	6	8	18	22	40	1	3	4	6	3	9	–	–	–	97	93	190
Sligo,	21	13	34	3	1	4	1	1	2	12	14	26	5	1	6	–	–	–	–	–	–	42	30	72
Waterford,	11	17	28	2	–	2	5	2	7	2	3	5	3	2	5	–	–	–	–	–	–	23	24	47
Total,	437	455	892	31	22	53	39	49	88	93	127	220	23	15	38	11	8	19	3	–	3	637	676	1,313
1861.																								
Armagh,	21	6	27	–	–	–	–	–	–	1	1	2	–	–	–	–	–	–	–	–	–	22	7	29
Ballinasloe,	33	27	60	–	–	–	2	–	2	2	–	2	4	4	8	1	3	4	–	–	–	42	34	76
Belfast,	37	34	71	6	6	12	3	–	3	5	11	16	–	–	–	–	–	–	–	–	–	51	51	102
Carlow,	15	14	29	–	1	1	1	3	4	3	3	6	–	–	–	–	–	–	–	–	–	19	21	40
Clonmel,	2	8	10	–	–	–	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	2	10	12
Cork,	67	76	143	4	3	7	6	8	14	15	12	27	1	2	3	2	–	2	–	–	–	95	101	196
Kilkenny,	15	10	25	–	–	–	2	–	2	3	5	8	–	–	–	–	–	–	–	–	–	20	15	35
Killarney,	20	14	34	–	–	–	3	5	8	1	4	5	–	–	–	–	1	1	–	–	–	24	24	48
Limerick,	38	53	91	1	1	2	4	5	9	9	14	23	–	–	–	–	–	–	–	–	–	52	73	125
Londonderry,	16	31	47	–	–	–	2	1	3	–	3	3	–	–	–	–	–	–	–	–	–	18	35	53
Maryborough,	13	23	36	1	1	2	–	2	2	3	6	9	2	–	2	1	–	1	–	–	–	20	32	52
Mullingar,	30	33	63	2	2	4	3	2	5	4	7	11	–	–	–	–	–	–	–	–	–	39	44	83
Omagh,	47	38	85	–	1	1	1	1	2	18	14	32	8	2	10	1	1	2	–	–	–	75	57	132
Richmond,	48	58	106	3	3	6	9	8	17	9	24	33	–	–	–	–	2	2	–	–	–	69	95	164
Sligo,	22	10	32	1	1	2	–	–	–	5	10	15	3	4	7	1	–	1	–	–	–	32	25	57
Waterford,	16	18	34	1	2	3	3	3	6	3	10	13	2	–	2	–	–	–	–	–	–	25	33	58
Total,	440	453	893	19	21	40	39	40	79	81	124	205	20	12	32	6	7	13	–	–	–	605	657	1,262

No. 9.—Table showing the Form of Disease in those remaining in District Asylums on 31st March, 1861.

Asylums.	Form of Disease.																					Total.		
	Mania.			Monomania.			Dementia.			Melancholia.			Imbecility and Epilepsy.			Idiocy.			Not specified.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	39	46	85	–	–	–	15	15	30	2	3	5	–	1	1	15	8	23	–	–	–	71	73	144
Ballinasloe,	135	125	260	–	–	–	–	–	–	–	–	–	35	25	60	5	8	13	–	–	–	175	158	333
Belfast,	148	103	251	12	16	28	6	3	9	27	41	68	–	–	–	–	–	–	–	–	–	193	163	356
Carlow,	69	44	113	14	10	24	9	16	25	12	18	30	4	3	7	–	–	–	–	–	–	108	91	199
Clonmel,	37	42	79	2	1	3	18	13	31	3	3	6	4	8	12	6	3	9	–	–	–	70	70	140
Cork,	105	96	201	25	24	49	52	61	113	26	28	54	16	15	31	12	22	34	–	–	–	236	246	482
Kilkenny,	48	41	89	10	5	15	8	6	14	6	18	24	9	4	13	2	–	2	–	–	–	83	74	157
Killarney,	63	41	104	–	–	–	31	17	48	13	18	31	6	5	11	–	2	2	–	–	–	113	83	196
Limerick,	118	121	239	1	–	1	25	21	49	28	40	68	9	10	19	7	6	13	–	–	–	188	201	389
Londonderry,	75	89	164	16	5	21	12	4	16	10	6	16	5	3	8	–	1	1	–	–	–	118	108	226
Maryborough,	54	45	99	–	–	–	13	14	27	13	21	34	15	6	21	3	1	4	–	–	–	98	87	185
Mullingar,	70	85	155	10	10	20	–	–	–	19	30	49	7	11	18	7	5	12	–	–	–	113	141	254
Omagh,	88	82	170	–	2	2	9	10	19	19	25	44	15	6	21	12	7	19	–	–	–	143	132	275
Richmond,	152	221	393	19	19	38	20	30	50	62	80	142	15	4	19	9	6	15	–	–	–	297	360	657
Sligo,	39	35	74	6	4	10	23	20	43	11	13	24	12	9	21	2	1	3	–	–	–	93	82	175
Waterford,	38	25	63	5	2	7	9	11	20	7	12	19	2	4	6	5	1	6	–	–	–	66	55	121
Total,	1,298	1,241	2,539	120	98	218	250	244	494	258	356	614	154	114	268	85	71	156	–	–	–	2,165	2,124	4,289

No. 10.—Table showing the supposed cause of Mental Disease of those in District Asylums, on 31st March, 1861.

Cause.	Males.	Females.	Total.	Cause.	Males.	Females.	Total.
Poverty and reverse of fortune,	70	110	180	Congenital idiocy, &c.,	18	30	48
Grief, fear, and anxiety,	79	160	239	Febrile affections,	26	66	92
Love, jealousy, and seduction,	40	75	115	Effects of climate and sunstroke,	44	5	49
Domestic quarrels and afflictions,	41	55	96	Bodily injuries and disorders,	26	32	58
Religious excitement,	97	86	183	Abuse of medicine,	24	2	26
Study and mental excitement,	24	28	52	Sedentary habits,	6	3	9
Ill-treatment,	8	6	14				
Pride,	5	7	12	Total Physical Causes,	505	286	791
Anger,	4	5	9				
Total Moral Causes,	368	532	900				
				Hereditary,	224	271	495
				Not known,	1,068	1,035	2,103
Intemperance and irregularity of life,	241	82	323				
Cerebral diseases or affections,	120	66	186	Total Males and Females in Asylums on 31st March, 1861,	2,165	2,124	4,289

No. 11.—State as to Probability of Recovery of Patients in District Asylums on 31st March, 1861.

Asylums.	Probably Curable.			Probably Incurable.			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	17	7	24	54	66	120	71	73	144
Ballinasloe,	30	21	51	145	137	282	175	158	333
Belfast,	50	57	107	143	106	249	193	163	356
Carlow,	43	39	82	65	52	117	108	91	199
Clonmel,	11	10	21	59	60	119	70	70	140
Cork,	107	114	221	129	132	261	236	246	482
Kilkenny,	8	10	18	75	64	139	83	74	157
Killarney,	21	19	40	92	64	156	113	83	196
Limerick,	34	41	75	154	160	314	188	201	389
Londonderry,	11	17	28	107	91	198	118	108	226
Maryborough,	47	44	91	51	43	94	98	87	185
Mullingar,	21	32	53	92	109	201	113	141	254
Omagh,	32	27	59	111	105	216	143	132	275
Richmond,	28	33	61	269	327	596	297	360	657
Sligo,	28	17	45	65	65	130	93	82	175
Waterford,	48	49	97	18	6	24	66	55	121
Total,	536	537	1,073	1,629	1,587	3,216	2,165	2,124	4,289

No. 12.—Table showing the Social Condition of Patients in District Asylums, on 31st March, 1861.

Asylums.	Social Condition.														
	Married.			Single.			Widowed.			Unknown.			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	13	15	28	56	54	110	2	4	6	–	–	–	71	73	144
Ballinasloe,	39	44	83	132	94	226	2	20	22	2	–	2	175	158	333
Belfast,	47	51	98	142	98	240	4	14	18	–	–	–	193	163	356
Carlow,	29	21	50	33	31	64	21	21	42	25	18	43	108	91	199
Clonmel,	32	25	57	25	29	54	7	4	11	6	12	18	70	70	140
Cork,	48	52	100	181	172	353	7	22	29	–	–	–	236	246	482
Kilkenny,	9	26	35	73	40	113	1	8	9	–	–	–	83	74	157
Killarney,	21	14	35	80	52	132	8	16	24	4	1	5	113	83	196
Limerick,	21	53	74	164	137	301	3	11	14	–	–	–	188	201	389
Londonderry,	14	30	44	104	72	176	–	6	6	–	–	–	118	108	226
Maryborough,	19	23	42	79	42	121	–	22	22	–	–	–	98	87	185
Mullingar,	15	34	49	98	97	195	–	10	10	–	–	–	113	141	254
Omagh,	26	36	62	111	86	197	6	10	16	–	–	–	143	132	275
Richmond,	57	93	150	222	209	431	4	20	24	14	38	52	297	360	657
Sligo,	26	23	49	65	54	119	2	5	7	–	–	–	93	82	175
Waterford,	13	14	27	52	30	82	1	11	12	–	–	–	66	55	121
Total,	423	554	983	1,617	1,297	2,914	68	204	272	51	69	120	2,165	2,124	4,289

No. 13.—Table showing the Educational Condition of Patients in District Asylums, on 31st March, 1861.

Asylums.	Educational Condition.																				
	Well Educated.			Can Read and Write well.			Can Read and Write indifferently.			Can Read only.			Who cannot Read.			Unknown.			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	8	2	10	7	7	14	16	6	22	13	25	38	27	28	55	–	5	5	71	73	144
Ballinasloe,	5	4	9	11	12	26	47	25	72	21	28	49	82	89	171	6	–	6	175	158	333
Belfast,	3	2	5	13	1	14	101	58	159	51	71	122	25	31	56	–	–	–	193	163	356
Carlow,	10	8	18	31	33	67	19	24	43	27	14	41	–	–	–	18	12	30	108	91	199
Clonmel,	3	4	7	6	7	13	9	5	14	11	4	15	33	34	67	8	16	24	70	70	140
Cork,	17	13	30	32	19	51	80	28	108	22	48	70	83	96	179	2	42	44	236	246	482
Kilkenny,	6	3	9	20	6	26	24	13	37	11	16	27	22	36	58	–	–	–	83	74	157
Killarney,	15	5	20	18	10	28	9	2	11	15	10	25	53	54	107	3	2	5	113	83	196
Limerick,	14	10	24	21	15	36	83	85	168	34	37	71	26	44	70	10	10	20	188	201	389
Londonderry,	5	–	5	16	9	25	28	8	36	21	39	60	48	52	100	–	–	–	118	108	226
Maryborough,	11	14	25	12	23	35	24	21	45	21	17	38	25	12	37	5	–	5	98	87	185
Mullingar,	3	2	5	38	15	53	25	12	37	25	26	51	15	55	70	7	31	38	113	141	254
Omagh,	12	8	20	19	11	30	47	15	62	25	47	72	39	50	89	1	1	2	143	132	275
Richmond,	50	25	75	82	88	170	63	41	104	34	91	125	28	64	92	40	51	91	297	360	657
Sligo,	1	–	1	7	6	13	25	10	35	18	13	31	33	53	86	9	–	9	93	82	175
Waterford,	1	2	3	10	8	24	14	7	21	9	11	20	26	27	53	–	–	–	66	55	121
Total,	184	102	286	355	270	625	614	360	974	358	497	855	565	725	1,290	109	170	279	2,165	2,124	4,289

No. 14.—Table showing the Relationship to each other of Patients who were under Treatment during the Two Years ending 31st March, 1861, as far as can be accurately gathered.

Asylums.	Degree of Relationship.																				
	Parents and their Children.			Brothers and Sisters.			Uncles and Aunts; Nephews and Nieces.			First Cousins.			Second Cousins.			Third and Fourth Cousins.			Patients who had Relatives in Asylums prior to the period of these returns.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	–	–	–	3	1	4	–	–	–	–	–	–	–	2	2	–	–	–	–	–	–
Ballinasloe,	–	–	–	4	4	8	–	–	–	3	8	11	–	–	–	–	–	–	–	–	–
Belfast,	–	–	–	1	1	2	–	2	2	–	–	–	7	1	8	–	2	2	1	–	1
Carlow,	–	2	2	2	–	2	1	1	2	4	–	4	–	–	–	–	–	–	–	–	–
Clonmel,	–	–	–	–	–	–	–	–	–	2	–	2	–	–	–	–	–	–	4	4	8
Cork,	–	–	–	7	5	12	1	1	2	–	–	–	4	3	7	–	–	–	2	–	2
Kilkenny,	–	–	–	–	–	–	3	1	4	2	2	4	2	–	2	1	1	2	–	3	3
Killarney,	1	1	2	2	2	4	3	3	6	7	3	10	–	–	–	–	–	–	3	2	5
Limerick,	–	–	–	2	2	4	1	2	3	5	2	7	–	4	4	–	–	–	–	–	–
Londonderry,	–	–	–	4	4	8	2	–	2	2	2	4	–	–	–	–	–	–	–	–	–
Maryborough,	1	1	2	–	4	4	–	–	–	1	1	2	–	–	–	–	–	–	–	–	–
Mullingar,	1	1	2	4	–	4	–	4	4	2	–	2	–	–	–	–	–	–	–	–	–
Omagh,	–	–	–	3	1	4	3	3	6	4	8	12	–	–	–	–	–	–	5	8	13
Richmond,	4	2	6	3	3	6	6	4	10	1	1	2	1	1	2	2	2	4	–	–	–
Sligo,	1	1	2	–	–	–	–	–	–	2	4	6	–	–	–	–	–	–	2	4	6
Waterford,	2	–	2	3	3	6	–	–	–	2	1	3	–	–	–	–	–	–	–	–	–
Total,	10	8	18	38	30	68	20	21	41	37	32	69	14	11	25	3	5	8	17	21	38

Total Number having Relationship, 220.

No. 15.—Classification of Patients in District Asylums, on 31st March, 1861.

Asylums.	Convalescent.			Quiet and Orderly, but Insane.			Moderately Tranquil.			Noisy and Refractory.			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	2	1	3	39	36	75	16	12	28	14	24	38	71	73	144
Ballinasloe,	7	9	16	59	50	109	60	47	107	49	52	101	175	158	333
Belfast,	30	31	61	84	60	144	42	31	73	37	41	78	193	163	356
Carlow,	33	13	46	25	25	50	32	30	62	18	23	41	108	91	199
Clonmel,	11	10	21	30	23	53	14	18	32	15	19	34	70	70	140
Cork,	23	15	38	89	85	174	73	77	150	51	69	120	236	246	482
Kilkenny,	1	1	2	33	28	61	38	37	75	11	8	19	83	74	157
Killarney,	5	3	8	28	15	43	73	54	127	7	11	18	113	83	196
Limerick,	18	15	33	70	52	122	60	66	126	40	68	108	188	201	389
Londonderry,	4	8	12	31	25	56	63	56	119	20	19	39	118	108	226
Maryborough,	1	5	6	31	27	58	54	30	84	12	25	37	98	87	185
Mullingar,	15	11	26	63	55	118	27	24	51	8	51	59	113	141	254
Omagh,	19	10	29	55	52	107	59	47	106	10	23	33	143	132	275
Richmond,	6	9	15	133	158	291	126	132	258	32	61	93	297	360	657
Sligo,	3	3	6	64	50	114	4	3	7	22	26	48	93	82	175
Waterford,	1	4	5	59	50	109	–	1	1	6	–	6	66	55	121
Total,	179	148	327	893	791	1,684	741	665	1,406	352	520	872	2,165	2,124	4,289

No. 16.—Table showing the Daily Average of Patients Employed, and how Employed, during the Two Years ending 31st March, 1860 and 1861.

Asylums.	Males.												Females.										Total.	
	Garden and Farm Labour.	Basket-making.	Knitting.	Pumping Water.	Weaving.	Tailoring.	Shoemaking.	Carpentering.	Painting.	Assisting Servants to clean House.	Miscellaneous Employment.	Total employed daily.	Garden and Farm Labour.	Spinning and Carding Flax.	Needlework.	Knitting.	Quilting.	Fancy Needlework.	Assisting in Laundry.	Assisting Servants to clean House.	Miscellaneous Employment.	Total employed daily.	Daily average employed.	Daily average unemployed.
1860.																								
Armagh,	14	–	–	8	–	–	1	1	–	14	21	59	–	–	–	3	2	–	8	10	40	63	122	20
Ballinasloe,	21	–	–	–	–	2	–	–	–	14	18	55	–	–	18	17	–	–	15	17	1	68	123	210
Belfast,	90	2	2	32	8	3	1	–	1	30	6	175	–	20	14	18	4	10	20	14	–	100	275	84
Carlow,	24	–	–	12	–	1	–	–	2	10	12	61	10	4	20	2	–	–	12	17	8	73	134	67
Clonmel,	25	–	–	3	–	2	–	1	–	5	6	42	–	–	–	15	–	–	12	8	11	46	88	52
Cork,	45	–	–	2	–	2	2	2	–	25	42	120	–	–	37	45	–	–	19	24	16	141	261	216
Kilkenny,	22	–	–	–	–	–	–	1	–	9	1	33	–	–	18	13	–	–	16	9	–	56	89	56
Killarney,	30	–	–	–	–	1	1	–	–	6	28	66	–	–	11	8	–	–	7	5	3	34	100	80
Limerick,	29	–	–	–	–	1	–	–	–	10	9	49	–	–	28	21	–	–	14	14	13	90	139	208
Londonderry,	46	–	–	–	5	–	3	–	–	8	35	97	–	21	24	15	–	6	5	11	8	90	187	39
Maryborough,	24	–	–	–	–	2	3	–	–	10	11	50	–	6	16	11	2	–	11	12	2	60	110	67
Mullingar,	25	–	–	–	–	–	–	–	–	10	–	35	–	–	30	21	–	–	14	16	–	81	116	112
Omagh,	14	–	–	–	1	–	–	1	–	4	36	56	–	4	14	17	–	2	7	8	5	57	113	151
Richmond,	69	–	–	24	–	6	6	2	–	32	20	159	–	–	75	14	3	7	43	53	15	210	369	285
Sligo,	24	–	–	–	–	3	3	1	–	15	10	56	1	–	13	11	–	–	9	11	2	47	103	66
Waterford,	9	–	–	–	–	–	2	–	–	2	5	18	–	1	7	9	–	–	3	6	4	30	48	78
Total,	511	2	2	81	14	23	22	9	3	204	260	1,131	11	56	325	240	11	25	215	235	128	1,246	2,377	1,791
1861.																								
Armagh,	16	–	–	8	–	–	–	1	–	14	22	61	–	–	–	6	–	–	6	30	20	62	123	21
Ballinasloe,	22	–	–	–	–	2	2	–	–	20	14	60	–	–	16	20	–	–	14	18	–	68	128	205
Belfast,	90	2	2	32	8	3	1	–	1	30	6	175	–	20	14	18	4	10	20	14	–	100	275	82
Carlow,	36	–	–	8	–	1	–	–	–	20	10	75	10	6	20	3	–	–	12	24	8	83	158	44
Clonmel,	30	–	–	3	–	2	–	1	–	5	6	47	–	–	–	15	–	–	14	7	5	41	88	52
Cork,	58	–	–	–	–	2	5	2	–	23	51	141	–	–	38	35	–	–	22	27	18	140	281	192
Kilkenny,	18	–	–	–	–	–	–	1	–	12	1	32	–	–	11	14	–	–	17	9	–	51	83	69
Killarney,	25	–	–	–	–	1	1	–	–	7	24	58	–	–	13	8	–	–	6	5	4	36	94	97
Limerick,	29	–	–	–	–	1	–	–	–	9	7	46	–	–	33	25	–	–	12	16	17	103	149	235
Londonderry,	46	–	–	–	5	–	3	–	–	8	35	97	–	20	22	15	1	5	5	11	17	96	193	33
Maryborough,	18	–	–	–	–	3	3	–	–	9	13	46	–	4	20	17	2	–	16	12	–	71	117	59
Mullingar,	27	–	–	–	–	–	–	–	–	20	–	47	–	–	18	15	–	–	14	16	–	63	110	132
Omagh,	15	–	–	–	2	–	–	1	–	9	31	58	–	3	13	15	–	2	7	11	6	57	115	150
Richmond,	101	–	–	22	–	4	6	4	–	36	22	195	–	–	134	14	2	–	44	58	8	260	455	199
Sligo,	17	–	–	–	–	3	3	1	–	12	14	50	2	–	13	10	–	–	9	14	3	51	101	77
Waterford,	9	–	–	–	–	–	2	–	–	2	5	18	–	1	7	9	–	–	3	6	4	30	48	78
Total,	557	2	2	73	15	22	26	11	1	236	261	1,206	12	54	372	239	9	17	221	278	110	1,312	2,518	1,725

No. 17.—TABLE showing Outlay and Produce of the Year on Farms and Gardens, for the Two Years ending 31st March, 1860 and 1861.

ASYLUMS.		Quantity of Land Cultivated.									Amount.								
		By Spade.			By Plough.			Grass.			Total.			Outlay.			Produce.			Net Profit.		
		A.	R.	P.	A.	R.	P.	A.	R.	P.	A.	R.	P.	£	s.	d.	£	s.	d.	£	s.	d.
Armagh,	1860,	4	0	34	—			4	2	12	8	3	6	28	13	8	64	11	8	35	18	0
	1861,	4	0	34	—			4	2	12	8	3	6	28	10	6	77	4	10	48	14	4
Ballinasloe,	1860,	6	1	12	17	1	26	12	1	30	36	0	28	226	12	10	368	10	9	141	17	11
	1861,	6	1	12	17	1	26	12	1	30	36	0	28	187	0	5	427	18	4	240	17	11
Belfast,	1860,	24	0	0	—			17	1	0	41	1	0	55	5	1	384	15	11	329	10	10
	1861,	26	0	0	—			15	1	0	41	1	0	38	6	7	331	5	7	292	19	0
Carlow,	1860,	6	2	0	—			3	3	0	10	1	0	35	6	8	159	14	6	124	7	10
	1861,	6	2	0	—			3	3	0	10	1	0	31	18	9	151	7	7	119	8	10
Clonmel,	1860,	19	0	0	5	0	0	5	0	0	29	0	0	84	17	9	185	4	4	100	6	7
	1861,	18	0	0	5	0	0	4	0	0	27	0	0	57	8	7	251	17	4	194	8	9
Cork,	1860,	16	0	0	10	0	0	12	0	0	38	0	0	215	11	11	307	13	3	92	1	4
	1861,	34	0	0	—			4	0	0	38	0	0	205	4	0	417	6	8	212	2	8
Kilkenny,	1860,	3	1	0	1	2	0	4	1	0	9	0	0	25	10	5	101	8	10	75	18	5
	1861,	4	1	0	3	2	0	7	1	0	15	0	0	13	13	9	138	1	1	124	7	4
Killarney,	1860,	2	0	0	14	0	0	1	0	0	17	0	0	100	16	3	236	0	11	135	4	8
	1861,	2	0	0	14	0	0	1	0	0	17	0	0	150	7	5	199	0	8	48	13	3
Limerick,	1860,	5	0	0	4	0	0	7	3	0	16	3	0	63	1	4	224	16	0	161	14	8
	1861,	5	2	0	3	2	0	7	3	0	16	3	0	74	17	6	224	1	6	149	4	0
Londonderry,	1860,	19	2	0	—			0	2	0	20	0	0	111	2	8	338	13	10	227	11	2
	1861,	19	0	5	—			0	3	35	20	0	0	134	16	2	290	15	1	155	18	11
Maryborough,	1860,	12	3	9	—			7	3	8	20	2	17	64	14	11	188	10	9	123	15	10
	1861,	12	3	9	—			7	3	8	20	2	17	58	6	8	136	18	6	78	11	10
Mullingar,	1860,	6	2	0	2	2	0	5	0	0	14	0	0	74	10	5	123	3	0	48	12	7
	1861,	7	0	0	2	2	0	4	2	0	14	0	0	91	4	9	176	19	5	85	14	8
Omagh,	1860,	12	0	20	—			8	3	12	20	3	32	81	0	10	247	3	9	166	2	11
	1861,	11	2	20	—			9	1	12	20	3	32	230	19	1	373	1	5	142	2	4
Richmond,	1860,	18	0	0	7	0	0	5	0	0	30	0	0	205	17	10	473	4	3	267	6	5
	1861,	17	0	0	7	0	0	6	0	0	30	0	0	318	5	11	573	9	4	255	3	5
Sligo,	1860,	10	2	0	10	2	0	1	0	30	22	0	30	203	18	9	309	5	7	105	6	10
	1861,	10	2	0	10	0	0	1	2	30	22	0	30	233	18	6	342	18	5	108	19	11
Waterford,	1860,	7	1	0	1	0	28½	2	0	0	10	1	28½	37	5	5	136	5	10	99	0	5
	1861,	7	1	0	1	0	28½	2	0	0	10	1	28½	39	10	10	118	13	11	79	3	1
Totals,	1860,	172	3	35	73	0	14½	98	1	12	344	1	21½	1,614	6	9	3,849	3	2	2,234	16	5
	1861,	192	0	0	64	0	14½	92	1	7	348	1	21½	1,894	9	5	4,230	19	8	2,336	10	3

No. 18.—TABLE showing the Number of Paying Patients who were in District Asylums during the Two Years ending 31st March, 1860 and 1861.

ASYLUMS.	Number of Patients.			CLASS OF LIFE.																Total Amount payable Annually.		
				Farming.		Trading.		Artisans.		Professional.		Educational.		Service of Crown.		Other pursuits.		Respectable, without Occupation.				
1860.	M.	F.	T.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	£	s.	d.
Armagh,	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	18	5	0
Ballinasloe,	3	3	6	–	–	1	–	–	–	–	–	–	–	1	–	–	–	2	2	81	0	0
Belfast,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	—		
Carlow,	2	–	2	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	32	4	0
Clonmel,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	—		
Cork,	6	1	7	1	–	–	–	2	–	–	–	–	–	3	–	–	–	–	1	91	17	11
Kilkenny,	6	5	11	3	3	2	1	–	–	–	–	–	–	1	1	–	–	–	–	147	0	0
Killarney,	7	2	9	–	–	1	1	–	–	–	–	–	–	2	–	–	–	4	1	182	18	4
Limerick,	12	6	18	1	1	1	4	–	–	–	–	–	–	7	–	–	–	3	1	274	1	2
Londonderry,	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	9	2	6
Maryborough,	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	12	3	4
Mullingar,	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	7	9	0
Omagh,	7	1	8	2	–	1	1	–	–	1	–	2	–	1	–	–	–	–	–	75	12	6
Richmond,	3	2	5	–	1	1	1	1	–	1	–	–	–	–	–	–	–	–	–	70	0	0
Sligo,	10	2	12	5	–	–	1	–	–	–	–	2	–	2	–	–	–	1	1	236	14	6
Waterford,	1	1	2	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	27	0	0
Total,	60	24	84	13	6	8	9	3	–	2	–	4	–	21	1	–	–	10	7	1,265	8	3
1861.																						
Armagh,	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	18	5	0
Ballinasloe,	4	3	7	1	–	–	–	–	–	–	–	–	–	2	–	–	–	1	3	82	12	0
Belfast,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	—		
Carlow,	2	–	2	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	35	10	0
Clonmel,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	—		
Cork,	6	1	7	1	–	–	–	2	–	–	–	–	–	3	–	–	–	–	1	91	17	11
Kilkenny,	3	6	9	1	4	2	1	–	–	–	–	–	–	–	1	–	–	–	–	137	0	0
Killarney,	6	1	7	–	–	2	1	–	–	–	–	–	–	2	–	–	–	2	–	145	0	0
Limerick,	5	1	6	1	1	–	–	–	–	–	–	–	–	4	–	–	–	–	–	49	18	6
Londonderry,	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	9	2	6
Maryborough,	1	–	1	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	12	3	4
Mullingar,	1	1	2	1	1	–	–	.	–	–	–	–	–	–	–	–	–	–	–	30	0	0
Omagh,	9	2	11	1	–	3	1	–	–	2	–	2	–	1	–	–	–	–	1	108	2	6
Richmond,	3	2	5	–	1	1	1	1	–	1	–	–	–	–	–	–	–	–	–	70	0	0
Sligo,	4	3	7	2	1	–	1	–	–		–	1	–	–	–	–	–	1	1	111	0	0
Waterford,	3	2	5	1	1	1	1	–	–	–	–	–	–	–	–	–	–	1	–	59	0	0
Total,	49	22	71	10	9	9	6	3	–	3	–	3	–	16	1	–	–	5	6	959	12	3

No. 19.—Return of Receipts and Expenditure for the

RECEIPTS.

Asylums.		Balance on hands on 1st April.			Treasury Advances.			Received for Pay Patients.			Received for Sale of Farm and Garden Produce.			Received for Sale of Offal, Old Stores, &c.			Received from Insurance Offices, for Loss by Fire.			Received from Miscellaneous Sources.			Total Receipts.		
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d	£	s.	d.
Armagh,	1860,	324	10	4	3,211	0	0		—		18	11	8	2	5	5		—		1	11	8	3,557	19	1
	1861,	375	15	4	3,501	2	0		—		26	14	0	2	17	1	56	8	7	1	3	5	3,964	0	5
Ballinasloe,	1860,	767	10	1	6,198	15	6	85	13	3	46	15	10	29	0	0		—		1	11	6	7,129	5	8
	1861,	737	13	10	6,369	7	1	53	17	4	127	3	10	10	1	6		—		2	11	10	7,300	15	5
Belfast,	1860,	881	12	10	5,672	5	9		—		115	7	3½	29	7	4½		—		3	11	4	6,702	4	7
	1861,	324	8	3	*6,499	4	11		—		130	9	2	19	17	3		—		24	11	11	6,998	11	6
Carlow,	1860,	99	7	11	3,150	0	0	35	15	2	14	4	8		—			—		1	6	0	3,300	13	9
	1861,	61	17	9	3,499	19	2	34	13	5	20	8	1		—			—		7	15	1	3,624	13	6
Clonmel,	1860,	220	3	7	3,145	1	5		—		132	14	4		—			—		8	15	0	3,506	14	4
	1861,	164	6	1	3,526	1	10		—		191	17	4		—			—		4	17	3	3,887	2	6
Cork,	1860,	445	15	8	6,700	0	0	78	12	5	61	9	6		—			—		15	8	5	7,301	6	0
	1861,	166	3	5	7,780	0	0	95	14	0	68	19	6	35	15	0		—		1	10	5	8,148	2	4
Kilkenny,	1860,	316	14	7	2,700	0	0	201	9	5	6	16	3	8	3	0		—		0	12	0	3,233	15	3
	1861,	205	14	4	2,850	0	0	147	16	8	29	13	7	8	0	7		—		1	6	9	3,242	11	11
Killarney,	1860,	265	4	0	3,393	3	3	169	10	0	170	8	11	4	19	7		—		1	10	0	4,004	15	9
	1861,	318	16	5	4,502	0	3	184	11	3	56	12	0	1	4	0		—			—		5,063	3	11
Limerick,	1860,	803	11	2	5,570	6	5	256	15	4	75	2	6	27	15	1		—		3	14	11	6,737	5	5
	1861,	620	0	1	6,379	18	3	195	7	4	112	2	0	32	10	4		—		9	18	1	7,349	16	1
Londonderry,	1860,	783	3	11	4,150	0	0	9	2	6	171	18	2	2	18	0		—			—		5,117	2	7
	1861,	811	14	7	4,280	15	1	9	3	0	205	0	5	3	6	6		—			—		5,309	19	7
Maryborough,	1860,	507	0	3	3,237	5	3	12	3	4	47	15	9	1	8	4		—		2	5	3	3,807	18	2
	1861,	510	11	9	3,564	2	7	12	4	0	62	11	2	4	4	4		—		1	0	0	4,154	13	10
Mullingar,	1860,	557	11	0	5,248	12	6	6	0	0	23	1	4		—			—		5	0	0	5,840	4	10
	1861,	656	4	2	5,520	7	8	7	9	0	51	19	5	10	4	0		—		0	15	0	6,246	19	3
Omagh,	1860,	217	16	1	4,800	0	0	93	9	10	53	0	0	4	6	10		—		6	5	5	5,174	18	2
	1861,	423	13	5	5,300	0	0	85	18	7	66	0	0	4	12	10		—		3	10	10	5,883	15	8
Richmond,	1860,	235	4	5	15,567	4	1	78	15	0	103	19	7	62	16	0	96	3	6	23	11	4	16,167	14	9
	1861,	481	5	8	16,273	9	0	55	6	17	140	4	8	30	17	4		—		44	12	11	17,025	16	2
Sligo,	1860,	334	1	6	3,393	3	1	90	5	5	30	18	6	4	15	9		—			—		3,853	4	3
	1861,	264	16	5	3,735	17	1	222	18	2	45	16	0		—			—		1	0	10	4,270	8	6
Waterford,	1860,	45	0	2	2,469	2	11	42	18	1	40	18	5	8	17	2		—		0	2	0	2,606	18	9
	1861,	56	0	11	2,649	12	10	52	15	8	30	3	1	5	11	1		—			—		2,794	3	7
General Total,	1860,	6,804	7	6	78,606	0	2	1,160	10	7	1,113	2	8½	186	12	6½	96	3	6	75	4	4	88,042	1	4
	1861,	6,179	2	5	88,231	17	9	1,157	15	0	1,365	14	3	169	1	10	56	8	7	104	14	4	95,264	14	2

EXPENDITURE.

Asylums.		Bedding and Furniture.			Repairs and Alterations.			Farm and Garden.			Rent, Rent-charge, Taxes, and Insurance.			Printing and Stationery.			Medicines and Medical Diet.			Wine, Beer, and Whisky.		
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Armagh,	1860,	310	16	8	135	14	6	28	13	8	31	18	10	14	8	4	16	17	9		—	
	1861,	325	2	5	233	15	11	28	10	6	29	0	4	15	6	0	15	14	10		—	
Ballinasloe,	1860,	529	13	0	408	1	9	62	9	0	3	15	0	35	13	11	29	15	3	22	5	0
	1861,	411	8	7	299	15	3	72	14	10	5	0	0	45	18	9	46	18	8	9	2	0
Belfast,	1860,	280	19	0	437	14	5	53	10	9	24	6	10	43	10	11	79	7	10	11	12	0
	1861,	235	3	2	532	9	4	63	7	10	24	7	6	42	9	0	78	17	3	9	15	0
Carlow,	1860,	138	17	1	91	2	0	17	8	8	23	6	5	12	13	5	30	2	1	8	1	7
	1861,	156	3	1	63	12	11	20	10	4	23	6	8	32	19	3	15	7	11	2	17	7
Clonmel,	1860,	232	18	0½	77	9	7	84	17	9½	4	17	6	36	1	8	49	15	8½	8	10	6
	1861,	295	1	2½	†224	17	4	57	8	7½	42	17	0	37	3	9½	60	17	6	12	0	0
Cork,	1860,	155	19	3	383	12	4½	215	11	7	32	9	0	43	0	5	315	17	10	24	17	1
	1861,	199	5	0	444	14	8½	205	4	0	32	9	0	46	9	8	341	7	8	26	5	5
Kilkenny,	1860,	51	19	8	182	10	6	25	10	5	12	9	11	36	13	3	92	7	4½	14	16	5
	1861,	86	3	8	92	2	10	13	13	9	12	9	11	33	8	0	121	10	10	17	5	5
Killarney,	1860,	209	4	2	219	18	9	100	16	3	12	15	0	16	16	8½	78	9	1½	66	0	8
	1861,	412	10	1½	‡371	16	11½	150	7	5½	12	15	0	35	9	4	129	5	10	92	6	9
Limerick,	1860,	262	8	1½	661	10	3	32	12	8½	14	14	8	44	11	1	102	15	6½	0	3	6
	1861,	341	4	3	296	10	11	44	16	2	14	14	9	57	14	5	127	6	0½		—	
Londonderry,	1860,	206	18	4	220	8	0	111	2	8	3	15	0	23	8	0	13	0	6	11	13	5
	1861,	243	19	4	228	7	11	134	16	2	3	15	0	33	9	4	10	18	5	25	18	4
Maryborough,	1860,	158	3	4	81	0	7	64	14	11	6	3	9	33	5	0	25	1	0	5	0	6
	1861,	258	14	7	107	9	7	58	6	8	8	11	3	25	9	1	42	1	5	12	9	0
Mullingar,	1860,	115	4	9	566	5	0	74	10	5	18	15	10	50	17	5	94	13	10	2	3	0
	1861,	331	2	1	439	15	9	91	4	9	18	15	0	22	17	6	92	5	0	0	17	2
Omagh,	1860,	320	5	2	299	6	10	7	2	7	1	10	9	35	5	8	194	0	7		—	
	1861,	156	19	0	881	8	11	55	14	10	15	0	0	63	14	6	236	2	0	48	2	4
Richmond,	1860,	853	0	2	1,361	12	2	205	17	10	33	11	11	117	8	1	1,274	1	4	87	8	5
	1861,	995	8	4	694	12	9	318	5	11	39	16	11	96	8	8	1,363	17	6	79	18	0
Sligo,	1860,	163	5	5	201	6	1	55	4	0	6	19	0	32	3	8	108	17	7		—	
	1861,	128	16	3	120	15	7	104	2	4	17	7	2	28	12	6	122	13	10		—	
Waterford,	1860,	150	7	7	129	17	6	24	19	10	5	0	0	15	8	10	27	15	1	23	16	0
	1861,	124	0	9	123	10	7	27	6	10	5	0	0	18	3	5	52	7	5	37	14	6
General Total,	1860,	4,199	19	9	5,457	5	3½	1,165	3	1	236	9	5	591	6	4½	2,532	18	5	286	8	1
	1861,	4,701	1	10	5,155	17	3	1,446	11	0	305	5	6	635	13	2½	2,857	12	1¼	374	11	6

* A sum of £300, included in this amount, was issued by the Commissioners of Public Works for the erection of a pump.

Two Years ending 31st March, 1860 and 1861.

EXPENDITURE.

Provisions, including Groceries.	Clothing. Patients.	Clothing. Servants.	Fuel and Light.	Washing.	Salaries of Officers.	Wages of Servants.		Asylums.
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
1,080 16 11	227 13 9	12 12 0	179 15 11	31 13 1	430 4 10	245 5 1	1860,	Armagh.
1,195 18 5	263 0 11	24 17 6	235 9 11	33 13 0	435 0 0	227 9 0	1861,	
2,576 14 6	677 8 4	116 4 4	360 7 6	63 13 6	706 12 0	444 11 10	1860,	Ballinasloe.
2,895 18 6	403 19 11	106 5 1	506 12 0	72 3 2	720 6 7	423 15 7	1861,	
3,020 2 1	754 10 6	80 0 0	304 10 8	109 5 9	650 0 0	386 16 4	1860,	Belfast.
3,111 3 0	819 7 4	80 0 0	379 18 8	133 9 8	647 4 5	425 18 8	1861,	
1,334 7 8	300 8 3	59 8 6	281 10 5	49 4 2	580 0 0	243 5 0	1860,	Carlow.
1,481 8 4	360 8 5	59 11 9	388 3 7	57 2 8	595 13 11	243 5 0	1861,	
1,245 2 5½	200 3 9	33 10 0	185 1 3½	45 0 0	625 0 0	304 0 10½	1860,	Clonmel.
1,393 16 0	176 3 9½	36 0 0	185 10 0	41 2 6½	625 0 0	305 8 2	1861,	
2,990 19 1	564 11 4½	155 0 7	464 13 8	109 5 6½	930 0 0	498 18 4	1860,	Cork.
3,354 7 11	579 12 7	163 8 7½	545 8 4	115 13 9½	930 0 0	513 1 10	1861,	
1,106 13 6	214 5 9½	80 3 0½	228 15 9½	32 4 9	620 0 0	254 10 7	1860,	Kilkenny.
1,166 9 4	184 3 2	51 12 11	269 16 3	35 7 4	625 13 4	269 12 2	1861,	
1,485 1 0½	19 19 3	3 10 9	369 6 4	92 18 11	626 17 9	306 14 0	1860,	Killarney.
1,781 19 7	316 16 0½	67 2 6	275 13 4	81 11 9	655 0 0	316 2 3	1861,	
2,624 4 10½	467 10 0½	46 0 9	302 9 7	82 2 8	767 8 0	528 16 1	1860,	Limerick.
3,260 1 6½	482 4 4	59 14 0	302 19 7	95 10 5	775 4 4	551 8 6	1861,	
1,803 5 3	272 18 10	91 8 0	274 11 0	69 11 1	585 0 0	304 3 0	1860,	Londonderry.
1,979 4 7	294 11 7	88 4 9	301 13 5	77 3 9	585 0 0	310 19 6	1861,	
1,359 13 0	231 10 4	62 18 10	268 15 11	65 0 5	565 0 0	238 6 9	1860,	Maryborough.
1,505 1 6	217 11 8	62 13 8	296 5 0	63 4 8	559 17 2	250 17 5	1861,	
2,306 1 6	220 2 6	29 13 2	427 18 8	78 5 0	640 1 6	338 8 11	1860,	Mullingar.
2,586 4 8	338 13 4	32 19 8	524 3 3	83 14 4	642 12 8	377 2 8	1861,	
1,811 3 4	356 10 6	61 15 3	407 19 10	138 5 2	650 0 0	403 19 0	1860,	Omagh.
1,983 15 4	378 17 8	89 15 6	534 7 5	67 10 11	652 3 0	415 6 5	1861,	
6,379 11 0	743 3 7	327 0 3	981 11 2	190 14 0	1,521 2 10	1,048 16 7	1860,	Richmond.
6,725 0 1	1,184 4 10	468 6 3	1,030 2 5	211 17 6	1,588 0 7	1,049 1 5	1861,	
1,342 9 9	331 6 10	42 10 4	318 12 3	29 18 11	610 0 0	279 19 7	1860,	Sligo.
1,508 16 2	275 15 2	50 2 1	330 11 2	36 15 1	630 0 0	292 2 3	1861,	
974 8 6	172 14 11	46 1 3	119 11 1	46 9 0	530 0 0	202 3 4	1860,	Waterford.
1,094 15 9	158 6 0	39 19 11	152 3 5	40 7 9	540 0 0	205 19 8	1861,	
33,440 14 5½	5,754 18 6½	1,247 17 0½	5,475 11 1	1,233 11 0½	11,037 6 11	6,028 15 3½	1860,	General Total.
37,024 0 8½	6,433 16 9	1,480 14 2½	6,258 17 9	1,246 8 4	11,206 16 11	6,177 10 9	1861,	

EXPENDITURE.

Tobacco and Snuff.	Incidental Expenses.	Superannuation Pensions.	Total Outlay.	Balance on hand 31st March each year.	Daily Average Number of Patients.	Average Cost of each Patient per annum.		Asylums.
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d		£ s. d.		
46 17 2	16 19 3	371 16 0	3,182 3 9	375 15 4	141¾	22 10 0	1860,	Armagh.
40 16 11	28 15 7	431 19 2	3,564 10 8	399 9 9	144	24 15 0	1861,	
28 15 9	104 2 3	221 8 11	6,391 11 10	737 13 10	333½	19 3 5	1860,	Ballinasloe.
45 7 3	127 18 8	331 17 6	6,525 2 4	775 13 1	333	19 11 10	1861,	
—	93 5 7	43 3 8	6,377 16 4	324 8 3	359	17 15 4	1860,	Belfast.
—	90 19 0	38 13 4	6,713 3 2	285 8 4	357	18 16 2	1861,	
—	49 10 9	19 10 0	3,238 16 0	61 17 9	201	16 2 3	1860,	Carlow.
—	67 1 1	19 10 0	3,587 2 6	37 11 0	202	17 15 1	1861,	
21 5 0	44 10 9	84 3 5½	3,342 8 3½	164 6 1	140	23 17 5	1860,	Clonmel.
20 1 9	41 16 3	87 13 2	3,642 17 1½	244 5 4½	140	26 0 4	1861,	
68 6 10	175 4 11½	6 14 8	7,135 2 7	166 3 5	477	15 6 1	1860,	Cork.
75 13 9	231 1 2½	6 14 8	7,810 18 2	337 4 2	473	17 4 6	1861,	
—	74 19 11½	—	3,028 0 11½	205 14 4	145	20 17 6	1860,	Kilkenny.
—	80 10 1	—	3,059 19 0	182 12 11	152	20 2 4	1861,	
33 17 6	43 18 1½	—	3,685 19 4	318 16 5	180½	20 8 5	1860,	Killarney.
31 13 5	51 6 11	—	4,781 17 3	281 6 8	191	25 0 5	1861,	
46 5 6	41 13 0	91 19 0	6,117 5 4½	620 0 1	347	17 12 7	1860,	Limerick.
55 6 10	31 1 1½	16 19 0	6,512 16 3½	836 19 9½	384	16 19 2½	1861,	
66 0 8	57 0 11	191 3 4	4,305 8 0	811 14 7	226	19 1 0	1860,	Londonderry.
66 18 0	54 18 7	191 3 4	4,631 2 0	678 17 7	226	20 9 10	1861,	
1 8 6	41 11 11	89 11 8	3,297 6 5	510 11 9	177	18 12 7	1860,	Maryborough.
1 4 0	35 13 9	75 0 0	3,580 10 5	574 3 5	176	20 6 10	1861,	
12 0 0	209 0 0	—	5,184 0 8	656 4 2	228	22 14 8	1860,	Mullingar.
5 16 0	195 10 2	—	5,783 14 0	463 5 3	242	23 18 0	1861,	
30 4 6	33 15 7	—	4,751 4 9	423 13 5	264	17 19 11	1860,	Omagh.
31 12 3	56 11 8	—	5,667 2 7	216 13 1	265	21 7 8	1861,	
105 19 10	138 3 7	317 6 4	15,686 9 1	481 5 8	654	24 18 1	1860,	Richmond.
96 8 9	172 12 9	381 1 7	16,495 4 3	530 11 11	654	26 0 8	1861,	
6 3 10	59 10 7	—	3,588 7 10	264 16 5	169	21 4 9	1860,	Sligo.
5 6 4	60 14 4	—	3,712 10 3	557 18 3	178	20 17 8	1861,	
21 7 9	52 5 1	8 12 1	2,550 17 10	56 0 11	126	20 4 10	1860,	Waterford.
20 14 4	73 2 9	8 12 1	2,722 5 2	71 18 5	126	22 3 6	1861,	
488 12 10	1,240 12 3½	1,445 9 1½	81,862 18 11	6,179 2 5	4,168	19 12 9	1860,	General Total.
496 19 7	1,399 13 11	1,589 3 10	88,790 15 2	6,473 19 0	4,243	20 18 6	1861,	

† Including £165 expended on account of Auxiliary Building not yet occupied.

‡ Including £227 17*s.* 6*d.* for gas fittings.

No. 20.—Table showing the Names and Salaries, &c., of the principal Officers of District Asylums, 31st March, 1861.

Asylums.	Extent of Accommodation.	Visiting Physicians.	Salary.	Resident Physicians and Managers.	Salary.	Allowances.	Estimated Annual Value thereof.	Matrons.	Salary.	Allowances.	Estimated Annual Value thereof.
	Beds.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
1. Armagh, .	144	Thos. Cuming, M.D.,	100 0 0	R. M'Kinstry, M.D.,	260 0 0	Apartments, servant, rations, washing, and vegetables.	100 0 0	Susan Smith, . .	70 0 0	Apartments, servant, rations, washing, and vegetables.	70 0 0
2. Ballinasloe, .	333	Thos. Dillon, M.D.,	120 0 0	Richard Eaton, M.D.,	320 0 0	Apartments, fuel, light, washing, and garden.	120 0 0	Rose O'Callaghan, .	80 0 0	Apartments, fuel, light, and washing.	90 0 0
3. Belfast, .	355	H. M'Cormac, M.D.,	100 0 0	Robt. Stewart, M.D.,	350 0 0	Apartments, rations, washing, keep of a horse and cow, &c.	120 0 0	M. F. Stewart, .	120 0 0	Apartments; same rations as Resident Physician.	80 0 0
4. Carlow, .	202	Thos. O'Meara, M.D.,	100 0 0	M. E. White, M.D.,	300 0 0	Apartments, washing, fuel, light, vegetables, and servant.	120 0 0	L. Parsons, . .	100 0 0	Apartments; same as Resident Physician.	60 0
5. Clonmel, .	140	W. J. Sheill, M.D., .	100 0 0	James Flynn, M.D.,	300 0 0	Apartments, servant, milk, vegetables, fuel, and light.	80 0 0	Frances C. Bell, .	70 0 0	Apartments; same as Resident Physician.	50 0 0
6 Cork, . .	507	Saml. Hobart, M.D.,	100 0 0	Thos. Power, M.D.,	430 0 0	Fuel, light, garden, washing, and apartments.	100 0 0	Martha Clifden, .	80 0 0	Rations, fuel, light, washing, and apartments.	62 0 0
7. Kilkenny, .	173	L. C. Kinchela, M.D.,	100 0 0	Barry Delany, M.D.,	260 0 0	Apartments, light, fuel, washing, and vegetables.	100 0 0	Joanna Ryan, . .	90 0 0	Apartments; same as Resident Physician.	50 0 0
8. Killarney, .	223	W. W. Murphy, M.D.,	100 0 0	M. S. Lawlor, M.D.,	300 0 0	Fuel, light, washing, and apartments.	90 0 0	M. A. Falvey, .	80 0 0	Apartments, fuel, light, and washing, and £5 for servant's wages.	55 0 0
9. Limerick, .	392	R. R. Gelston, M.D.,	125 0 0	R. Fitzgerald, M.D.,	320 0 0	Bread, milk, coals, candles, washing, servant, and vegetables.	91 9 11	Maria Raleigh, .	90 0 0	Same as Resident Physician, .	58 4 9
10. Londonderry,	226	B. White, M.D., .	100 0 0	W. F. Rogan, M.D.,	260 0 0	House, coals, candles, attendance, washing, and vegetables.	100 0 0	Eliza Grant, . .	70 0 0	Ditto, ...	50 0 0
11. Maryboro', .	198	John Jacob, M.D., .	100 0 0	T. C. Burton, M.D.,	250 0 0	House, coals, candles, vegetables, washing, garden, &c.	100 0 0	J. Farrell, . .	85 0 0	Same as Resident Physician, and apartments.	43 12 0
12. Mullingar, .	269	J. Ferguson, M.D., .	100 0 0	H. Berkeley, M.D., .	300 0 0	Apartments, fuel, servant, and rations.	100 8 10	Catherine Costello, .	75 0 0	Rations and apartments, . .	70 8 10
13. Omagh, .	275	H. Thompson, M.D.,	100 0 0	Frs. J. West, M.D.,	300 0 0	Vegetables, milk, fuel, light, and apartments.	100 0 0	Hannah Hudson, .	75 0 0	Vegetables, fuel, light, milk, and apartments.	70 5 0
14. Richmond, .	660	R. Tuohill, M.D., .	168 9 4	Joseph Lalor, M.D.,	440 0 0	Fuel, light, vegetables, washing, and apartments.	76 8 9	M. Magrane, . .	90 0 0	Apartments, rations, fuel, light, and washing.	100 5 2
		J. T. Banks, M.D., .	150 0 0					E. Blundell, Assistant Matron, .	50 0 0	Ditto, ...	86 11 9
		J. Hughes, Surgeon,	150 0 0					M. Martin, Schoolm.	30 0 0	Allowances, &c., &c., . .	20 0 0
15. Sligo, . .	260	Wm. S. Little, M.D.,	100 0 0	John M'Munn, M.D.,	300 0 0	Ditto, ...	100 0 0	Margaret Benson, .	75 0 0	Rations, fuel, light, and washing.	80 0 0
16. Waterford, .	142	P. R. Connolly, M.D.,	100 0 0	Capt. John Dobbs, Manager.	200 0 0	Ditto, ...	112 0 0	K. P. Ronayne, .	70 0 0	Same as Manager, . . .	67 14 8

No. 20.—Table showing the Names and Salaries, &c., of the principal Officers of District Asylums, 31st March, 1861—*continued*.

Asylums.	Extent of Accommodation.	Protestant Chaplains.	Salary.	Roman Catholic Chaplains.	Salary.	Apothecaries.	Salary.	Allowances.	Estimated Annual Value thereof.	Clerks and Storekeepers.	Salary.	Allowances.	Estimated Annual Value thereof.
	Beds.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
1. Armagh, .	144	*—	—	—	—	—	—	—	—	Sam. Parks, Storekeeper,	30 0 0	Apartments, rations, washing, vegetables.	23 12 6
2. Ballinasloe, .	333	Rev. J. C. Walker,	40 0 0	Rev. J. Kirwan, .	40 0 0	J. E. Poyntz, .	50 0 0	No allowances,	—	Michael Barrett, Clerk.	36 0 0	No allowances, . .	—
										Bartholomew Rock, Storekeeper.	30 0 0	Apartments, washing, and rations.	25 0 0
3. Belfast, .	355	—	—	—	—	James Moore, .	50 0 0	Ditto, .	—	Thomas Wilson, .	50 0 0	Apartments, rations, and washing.	50 0 0
4. Carlow, .	202	Rev. Wm. Purdon,	25 0 0	Rev. Patk. Boland,	25 0 0	Alfred Shaw, .	30 0 0	Ditto, .	—	Timothy Brenan, .	40 0 0	Apartments, washing, fuel, light, rations, clothing, &c.	40 0 0
5. Clonmel, .	140	Rev. Mr. Fry, .	25 0 0	Rev. Mr. Casey, .	35 0 0	Richard Graham,	30 0 0	Ditto, .	—	Edward O'Neill, .	65 0 0	No allowance, . .	—
6. Cork, . .	507	Rev. J. Bedford Jones,	50 0 0	Rev. F. L. Casey,	50 0 0	Wm. Thos. Jones,	75 0 0	Ditto, .	—	Wm. Connell, Clerk, .	75 0 0	Rations, fuel, light, and washing.	18 0 0
										Wm. Rennick, Steward,	80 0 0	Ditto, . .	40 0 0
										J. P. Duggan, Storekeep.	30 0 0	Ditto, . .	18 0 0
7. Kilkenny, .	173	Rev. W. C. Gorman,	30 0 0	Rev. E. Larkin, .	35 0 0	Henry Fitzsimons,	45 0 0	Ditto, .	—	Michael Curran, .	80 0 0	No allowances, . .	—
8. Killarney, .	223	Rev. F. Le Hunt, .	25 0 0	Rev. J. Connihan,	50 0 0	Richard Linnegar,	30 0 0	Ditto, .	—	J. Wallace, . .	70 0 0	Fuel, light, washing, and rations.	32 0 0
9. Limerick, .	392	Rev. Benj. Jacob, .	50 0 0	Rev. M. Malone, .	50 0 0	John B. Bouchier,	50 0 0	Ditto, .	—	James Bodkin, . .	100 0 0	No allowances, . .	—
10. Londonderry,	226	Rev. W. Craig, Episcopalian Chaplain.	25 0 0	Rev. D. Magge, .	25 0 0	W. J. Eames, .	30 0 0	Ditto, .	—	Thomas Colhoun, .	50 0 0	Apartments, coal, candles, rations, washing, and vegetables.	50 0 0
		Rev. J. Denham, Presbyterian Chaplain.	25 0 0										
11. Maryborough,	198	Rev. Thos. Harpur,	25 0 0	Rev. Jas. Carpenter,	25 0 0	Thomas Pilsworth,	30 0 0	Ditto, .	—	Thomas C. Molloy, .	50 0 0	No allowances, . .	—
12. Mullingar, .	269	Rev. John Hopkins,	35 0 0	Rev. Jas. Moran,	50 0 0	W. Middleton, M.D.,	35 0 0	Ditto, .	—	John Newburn, . .	50 0 0	Rations, ...	50 0 0
13. Omagh, .	275	Rev. R. Swift, .	30 0 0	Rev. D. O'Doherty,	30 0 0	Francis Trenor, .	35 0 0	Ditto, .	—	George Queale, . .	65 0 0	Rations, fuel, and light,	35 0 0
		Rev. J. Mitchell, Presbyterian Chaplain.	30 0 0										
14. Richmond, .	660	Rev. A. Leeper, .	80 0 0	Rev. J. Faulkner,	100 0 0	William Daxon, .	100 0 0	Fuel, light, vegetables, and washing,	85 0 0	J. Nunn, Accountant,	100 0 0	No allowances, . .	—
										J. Fitzsimons, Clerk and Storekeeper.	80 0 0	Ditto, . .	—
										M. C. Shannon, Assistant Storekeeper,	26 0 0	Rations, fuel, light, and washing.	45 7 7
15. Sligo, . .	260	Rev. Edward Day, .	30 0 0	Rev. John Morris,	40 0 0	John Lougheed, .	35 0 0	No allowances,	—	Robert Browne, . .	50 0 0	Ditto, . .	40 0 0
16. Waterford, .	142	Venerable Robt. Bell,	25 0 0	Rev. E. J. Browne,	35 0 0	John Mackesy, .	30 0 0	Ditto, .	—	Thomas Keary, . .	80 0 0	No allowances, . .	—

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* A Chaplain attends, who is paid for his services by the Lord Primate.

No. 21.—Table showing the Number of Dormitories, and Beds in each, in Asylums on 31st March, 1861.

Asylums.	Male Side.						Female Side.						Total Male and Female Accommodation.
	No. of Dormitories.	No. of Beds in each.	Total No. of Dormitories.	Total No. of Beds.	No. of Single Apartments.	Total Male Accommodation.	No. of Dormitories.	No. of Beds in each.	Total No. of Dormitories.	Total No. of Beds.	No. of Single Apartments.	Total Female Accommodation.	
Armagh,	6	3	8	31	41	72	6	3	8	31	41	72	144
	1	11					1	11					
	1	2					1	2					
Ballinasloe,	4	7	22	114	64	178	9	6	19	86	69	155	333
	10	6					1	5					
	1	5					9	3					
	7	3					–	–					
Belfast,	2	11	25	152	37	189	1	15	20	131	35	166	355
	7	10					3	12					
	1	7					3	10					
	1	6					2	7					
	6	4					6	4					
	7	3					2	3					
	1	2					3	2					
Carlow,	1	21	8	64	45	109	1	19	8	49	44	93	202
	1	19					1	6					
	6	4					6	4					
Clonmel,	1	22	6	54	16	70	1	22	6	54	16	70	140
	2	8					2	8					
	1	7					1	7					
	1	5					1	5					
	1	4					1	4					
Cork,	2	12	28	184	66	250	5	10	29	188	69	257	507
	3	10					1	9					
	2	8					2	8					
	1	9					3	7					
	9	6					6	6					
	4	4					8	5					
	7	5					4	4					
Kilkenny,	6	8	9	73	14	87	6	8	9	72	14	86	173
	2	7					2	7					
	1	11					1	10					
Killarney,	2	8	13	82	33	115	3	8	12	75	33	108	223
	7	7					5	7					
	2	5					2	5					
	1	4					1	4					
	1	3					1	2					
Limerick,	1	16	14	120	69	189	–	–	15	137	66	203	392
	2	14					2	15					
	2	13					6	14					
	2	12					1	5					
	1	8					6	3					
	6	3					–	–					
Londonderry,	7	4	11	74	43	117	5	4	9	64	42	106	223
	2	5					2	5					
	2	18					2	17					
Maryborough,	1	17	9	57	42	99	1	17	9	55	44	99	198
	2	8					2	7					
	6	4					6	4					
Mullingar,	1	12	12	82	43	125	2	13	11	101	43	144	269
	1	10					3	11					
	3	8					2	9					
	3	6					4	6					
	3	5					–	–					
	1	3					–	–					
Omagh,	2	10	15	85	58	143	1	10	12	77	55	132	275
	5	8					5	8					
	3	4					1	6					
	4	3					1	5					
	1	1					4	4					
Richmond,	1	13	44	250	50	300	2	11	61	294	66	360	660
	3	12					2	9					
	1	11					6	8					
	1	10					6	7					
	3	9					5	6					
	2	8					3	5					
	2	7					11	4					
	5	6					23	3					
	5	5					3	2					
	8	4					–	–					
	10	3					–	–					
	3	2					–	–					
Sligo,	2	10	19	96	34	130	2	10	19	96	34	130	260
	2	8					2	8					
	7	5					7	5					
	7	3					7	3					
	1	4					1	4					
Waterford,	1	15	9	61	12	73	1	15	9	55	14	69	142
	1	14					1	14					
	1	8					6	4					
	6	4					1	2					
Total Accommodation,													4,496

No. 22.—Table showing the Number of Meetings held during the Two Years ending 31st March, 1860 and 1861, and the Attendance of Governors thereat.

Asylums.	April, 1859.		May, 1859.		June, 1859.		July, 1859.		August, 1859.		Sept., 1859.		October, 1859.		Nov., 1859.		December, 1859.		January, 1860.		February, 1860.		March, 1860.		Total No. of Meetings during the year.	Average attendance of Governors.
	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.	No. of Meetings.	No. of Governors in attendance.		
1860.																										
Armagh, .	1	3	1	6	1	1	1	4	1	5	1	7	1	8	1	7	1	8	1	5	1	6	1	5	12	5
Ballinasloe, .	1	5	1	4	1	4	1	3	1	3	1	7	1	5	1	5	1	3	1	3	1	3	1	6	12	4
Belfast, .	–	–	1	4	1	4	1	5	1	8	1	5	1	9	1	9	1 1	5 9	1	6	1	4	1 1	8 4	13	6
Carlow, .	1	4	1	3	1	3	1	3	1	4	1	3	1	3	1	7	1	10	1	9	1	4	1	8	12	5
Clonmel, .	–	–	1	4	1	5	1 1	5 4	1	4	1 1 1 1	7 6 9 8	1	13	1	6	1 1 1	3 11 8	1	6	1	5	1 1	4 5	18	6
Cork, . .	1 1	9 5	1	9	1	8	1	8	1	5	1	8	1	10	1	6	1	6	1	11	1	5	1 1	6 3	14	7
Kilkenny, .	1 1	2 7	1	3	1 1 1	2 2 3	1 1	2 3	1	2	1	1 4	1	2 4	1	1 4	1	2 3	1	2 3	1	2 6	1	3	23	3
Killarney, .	1	6	1	4	1	6	1	3	1	5	1	5	1	5	1	5	–	–	1	5	1	5	1	3	11	5
Limerick, .	1	6	1	5	1	10	1	9	1 1	5 6	1	10	1 1	7 8	1	11 12	1 1 1	8 7 4	1 1	6 3	1	5	1	10	18	7
Londonderry,	1	8	1	9	1	5	1	11	1	3	1	3	1	8	1	21	1	6	1	7	1	9	1	6	12	8
Maryborough,	1	5	1	5	1	5	1	3	1	6	1	5	1	5	1	5	1	6	1 1	4 9	1	7	1	8	13	5
Mullingar, .	1	4	1	6	1	2	1	5	1	5	1	2	1	4	1	6	1	6	1	3	1	4	1	2	12	4
Omagh, .	1	3	1	4	1	9	1	4	1	4	1	6	1	4	1	5	1	7	1	8	1	3	1	5	12	5
Richmond, .	2	10	2	11	2	10	2	10	2	9	2	13	2	11	2	11	2	8	2	9	2	10	2	10	24	5
Sligo, . .	1	4	1	3	1	5	1	5	1	4	1	7	1	10	1	4	1	3	1	4	1	5	1 1	4 3	13	5
Waterford, .	1	6	1	4	1	3	1	5	1	3	1	5	1	7	1	7	1	4	1	6	1	6	1	5	12	5

	April, 1860.		May, 1860.		June, 1860.		July, 1860.		August, 1860.		Sept., 1860.		October, 1860.		Nov., 1860.		December, 1860.		January, 1861.		February, 1861.		March, 1861.			
1861.																										
Armagh, .	1	4	1	5	1	5	1	1	1	1	1	4	1	3	1	4	1	4	1	4	1	4	1	5	12	4
Ballinasloe, .	1	5	1	4	1	3	1	3	1	4	1	4	2	8	1	6	1	8	1	4	1	4	1	4	13	4
Belfast, .	–	–	1	5	1	6	1	7	1	6	1	4	1	7	1	8	1	8	1	9	1	8	1 1	7 6	12	7
Carlow, .	1	4	2	4	1	4	1	5	1	5	1	4	1	3	1	3	1	4	1	4	1	6	1	3	13	4
Clonmel, .	–	–	1	3	1	3	1	3	1	7	1	4	1	6	1	3	1	4	1	2	1 1	2 4	1	3 5	13	4
Cork, . .	1	10	1	8	1	8	1	9	1	6	1	7	1	11	1	6	1	9	1	6	1	9	1 1 1	12 6 6	14	8
Kilkenny, .	1 1	2 5	1 1	2 3	1 1	2 5	1 1	2 3	1	3	1	4	1	6	1 1 1	2 2 11	1 1	2 3	1	7	1	4	1 1	2 6	20	4
Killarney, .	1	6	1	4	1	3	1	4	1	5	1	7	1	4	1	4	1	6	1	3	1	3	1	8	12	5
Limerick, .	1 1	10 7	1 1	8 3	1	6	1 1	8 4	1	5	1	3	1	7	1 1	7 3	1 1	11 10	1	3	1	5	1	6	17	6
Londonderry,	1	4	1	5	1	6	1	7	1	7	1	3	1	6	1	18	1	6	1	6	1	8	1	6	12	7
Maryborough,	1	7	1	7	1	6	1	11	1 1	7 7	1 1	5 6	1	4	1	6	1	7	1	3	1	5	1	5	14	6
Mullingar, .	1	6	1	6	1	2	1	4	1	4	1	5	1	4	1	4	1	4	1	4	1	4	1	4	12	4
Omagh, .	1	8	1	8	1	4	1	6	1	5	1	10	1	14	1	8	1	4	1	10	1	6	1	12	12	8
Richmond, .	2	11	2	12	2	14	3	19	2	16	3	19	2	12	2	9	2	7	2	5	2	7	3	10	27	5
Sligo, . .	1	4	1	7	1	5	1	4	1	3	1	5	1	5	1	4	1	4	1	5	1	4	1 1	3 3	13	4
Waterford, .	1	4	1	3	1	3	1	3	1	3	1	3	1	4	1	4	1	7	1	4	1	7	1	6	12	4

No. 23.—Table showing the Superannuation Allowances granted to Officers and Servants of District Asylums, in pursuance of the Act 19 & 20 Vic., cap. 99, from the 31st March, 1859, to 31st March, 1861 (*in continuation of Table* 24, *App. B., Report of Inspectors for* 1858–9, *p.* 52).

Asylum.	Name of Person Superannuated.	Name of Office.	Salary on Retirement.			Estimated Value of Emoluments.			Age on Retirement.	Period of Service.	Amount of Superannuation granted.			Date of Retirement.
			£	s.	d.	£	s.	d.	Years.	Years.	£	s.	d.	
Armagh, .	William Remming, .	Attendant, . .	12	0	0	22	12	0	–	–	14	8	4	12 Dec. 1859.
	Mary M'Geough, .	Cook, ...	10	0	0	20	12	0	67	17	10	4	0	5 Feb. 1860.
Ballinasloe, .	John B. M'Kiernan,	Manager, . .	260	0	0	120	0	0	56	35	240	0	0	22 July, 1859.
	Margaret A. Callan,	Matron, . .	70	0	0	90	0	0	41	19	53	6	8	12 Mar. 1860.
Richmond, .	Teresa Knowles, .	Deputy Nurse, .	6	0	0	28	0	0	–	13	8	10	0	25 April, 1860.
	Pakenham Beatty, .	Apothecary, .	100	0	0	85	12	6	70	47	170	3	1	7 Nov. 1860.

No. 24.—Names of Governors who attended Board Meetings during the two Years ended 31st March, 1861, with Dates of Appointment.

Name.	Date of Appointment.
Armagh.	
Rev. James Jones,	1831.
Sir James Stronge, Bart. D.L.	1841.
William Paton, Esq., J.P.	,,
Right Hon. E. Lucas, D.L.	,,
Earl of Gosford, D.L.	1845.
George Robinson, Esq , D.L.	1847.
Rev. Alexander Irwin,	1850.
Maxwell Cross, Esq., J.P.	1851.
John Nugent, Esq., M.D., *ex-officio*,	1852.
Thomas Dobbin, Esq., J.P.	,,
Most Rev. Archbishop Dixon,	1854.
W. Forster, Esq.	1855.
Ballinasloe.	
Right Hon. Earl of Clancarty,	Aug. 15, 1833.
Right Hon. Lord Clonbrock,	Dec. 31, 1834.
Walter Laurence, Esq.	,,
Hon. Robert Le Poer Trench,	Feb. 16, 1844.
Denis H Kelly, Esq., D.L.	,,
James Bell, Esq., J.P.	,,
Henry J. Gascoyne, Esq., J.P.	,,
Right Rev. Doctor Derry,	Sept. 13, 1847.
G. D. H. Kirkaldy, Esq., J.P.	,,
Major John D'Arcy, J.P.	Feb. 12, 1855.
Harry T. Potts, Esq., J.P.	,,
Viscount Dunlo,	Nov. 19, 1860.
John Nugent, Esq., M D., *ex-officio*,	1852.
George W. Hatchell, Esq., M.D., *ex-officio*,	July 4, 1857.
Belfast.	
Mayor of Belfast,	March, 1829.
William M'Cance, Esq., J.P.	January, 1836.
Right Rev. Bishop Denvir,	October, 1836.
Rev John Edgar, D.D.	,,
Rev. H. Montgomery, LL.D.	,,
Very Rev. Dean Stannus,	April, 1842.
Rev. H. Cooke, D.D., LL.D.	,,
Conway B. Grimshaw, Esq., J.P.	October, 1846.
John Clarke, Esq., J.P.	Sept. 1847.
John Sharman Crawford, Esq., J.P.	Nov. 1847.
Bishop of Down and Connor,	April, 1850.
William Dunville, Esq. J.P.	May, 1851.
Rev. T. F. Miller, D.D.	Dec. 1851.
John Nugent, Esq., M.D.	April, 1852.
Adam J. Macrory, Esq.	June, 1852.
Thomas M'Clure, Esq., J.P.	January, 1856.
George W. Hatchell, Esq., M.D.	July 4, 1857.
Carlow.	
Samuel Haughton, Esq.	Dec. 1, 1831.
Rev James Maher, P.P.	Nov. 2, 1837.
Horace Rochfort, Esq., D.L.	May 5, 1843.
Robert Clayton Browne, Esq., D.L.	Feb. 15, 1847.
Hugh Blackney, Esq.	Oct. 19, 1848.
John Nolan, Esq., J.P.	,,
William F. Burton, Esq.	March 7, 1850.
Henry Bruen, Esq., M.P.	Dec. 21, 1853.
John Nugent, Esq., M.D.	–
Right Rev. Doctor Walshe,	Dec. 21, 1853.
William Ducket, Esq., J.P.	,,
Philip Newton, Esq., J P.	,,
Thomas Fitzgerald, Esq., J.P.	Jan. 29, 1856.
Very Rev. T. Dunne, D.D.	Sept. 4, 1859.
John Nangle, Esq., J.P.	
Clonmel.	
John Bagwell, Esq., M.P.	1834.
Stephen Moore, Esq., D.L.	,,
Rev. Walter Giles,	1835.
Rev. Doctor Burke, P.P.	1836.
Rev. Mr. Baldwin, P.P.	,,
Charles Bianconi, Esq., J.P.	1841.
Edward Phelan, Esq., M.D., J.P.	,,
W. H. Riall, Esq., J.P.	1842.
Rev. John Dill,	1843.
Joseph Grubb, Esq.	1849.
Joseph Kenny, Esq., J.P.	1856.
Richard W. Bagley, Esq., J.P.	1859.
Bassett William Holmes, Esq., J.P.	,,
Joshua R. Minnett, Esq., J.P.	,,
Laurence Waldron, Esq., M.P., D.L.	,,
John Nugent, Esq., M D., *ex-officio*,	1852.
Geo. W. Hatchell, Esq., M.D., *ex-officio*,	1857.
Cork.	
Sir D. J. Norreys, Bart., D.L.	Oct. 4, 1845.
Thomas George French, J.P.	,,
Cork—*continued*.	
William Coppinger, Esq.	Oct. 4, 1845.
Horatio Townsend Esq., D.L.	,,
Cooper Penrose, Esq.	,,
F. Bernard Beamish, Esq., M.P., D.L.	,,
Captain R. T. Rye, J.P.	,,
James Morrogh, Esq., J.P.	,,
Right Rev. Doctor Delany, D.D., R. C. Bishop,	March 13, 1848.
Recorder of Cork, Q.C.	,,
The Archdeacon of Cork. LL.D.	,,
William J. Sheehy, Esq., J.P.	,,
David Leahy Arthur, Esq., J.P.	,,
D. W. J. Norreys, Esq , J.P.	June 17, 1850.
John Nugent, Esq., M.D.	May 1, 1852.
Members of Parliament for city of Cork,	Feb. 18, 1853.
Mayor of Cork,	,,
High Sheriff of County,	,,
Hon. Robert Hare. J.P.	,,
Nicholas Dunscombe, Esq., D.L.	,,
William Lumley Perrier, Esq., J.P.	,,
R. Goold Adams, Esq , J.P.	,,
H. Winthorp O'Donovan, Esq., J.P.	,,
B. S. Wood, Esq., J.P.	,,
R. De La Cour Beamish, Esq., J.P.	,,
George W. Hatcheil, Esq., M.D.	1857.
Lord Bishop of Cork, Cloyne, and Ross,	July 18, 1857.
Noble Johnson, Esq.	Sept. 22, 1859.
Kilkenny.	
The Right Hon. the Earl of Desart,	1852.
George Bryan, Esq., D.L., J P.	,,
Col. the Right Hon. W. F. F. Tighe, V.L.	,,
Michael Sullivan, Esq., M.P., *ex-officio*,	,,
The Hon. C. H. B. Wandesforde,	,,
Right Rev. Dr. O'Brien, Lord Bishop of Ossory and Ferns,	,,
Right Rev. Dr. Walsh, R. C. Bishop,	,,
Sir John Blunden, Bart., D.L., J.P.	,,
William H. Flood Esq., D.L., J.P.	,,
Captain J. N. Greene, J.P.	,,
William F. Finn, Esq , J.P.	,,
John Nugent, Esq., M D., *ex-officio*,	,,
Peter Connellan. Esq., D.L., J.P.	,,
J. M. Tidmarsh, Esq., J.P. High Sheriff,	1856.
Hon. L. A. Ellis, M.P., *ex-officio*,	1857.
Geo. W. Hatchell, Esq., M.D., *ex-officio*,	,,
Major W. V. Stuart, D.L., J.P.	1858.
John Walsh, Esq., J.P.	,,
Edward Golding, Esq., J.P.	1860.
Edmd. Murphy, Esq., Mayor, *ex-officio*,	,,
John Power, Esq., J.P.	1861.
Killarney.	
D. C. Coltsmann, Esq., J.P.	April 26, 1852.
William Denny, Esq., D.L.	,,
Sir William D Godfrey, Bart., D.L.	,,
Thomas Gallwey, Esq., J.P.	,,
Right Hon. Colonel Herbert, M.P.	,,
John Leahy, Esq., J.P.	,,
Denis Shine Lalor, Esq., J.P.	,,
Daniel Mahony, Esq., J.P.	,,
The M'Gillicuddy of the Reeks, D.L.	,,
James O'Connell. Esq., J.P.	,,
M'Carthy O Leary, Esq., J.P., D L.	,,
The Rt. Rev. Dr. Moriarty, R.C. Bishop,	Nov. 13, 1854.
J. Morrogh Bernard, Esq , D.L.	Sept. 23, 1859.
Henry Leahy, Esq., J.P.	,,
Limerick.	
Lord Monteagle,	Feb. 18, 1829.
The Mayor of Limerick,	–
The Dean,	–
William Howley, Esq., D.L.	Dec. 15, 1829.
William H. Gabbett, Esq.	June 21, 1833.
Henry Maunsell, Esq., J.P.	,,
John W. Mahony, Esq., J.P.	,,
David J. Wilson, Esq	Sept. 30, 1836.
John Singleton, Esq., J.P.	,,
Richard Russell, Esq., J P.	1847.
William H. Barrington, Esq., J.P.	,,
William Hartegan, Esq., J.P.	,,
William Gibson, Esq., J.P.	,,
Hon. S. Spring Rice,	,,
Right Hon. William Monsell, M.P.	,,
Thomas O'Grady, Esq., J.P.	1849.
Thomas Boyse, Esq , J P.	1850.
John Nugent. Esq , M.D.	April 26, 1852.
George W. Hatchell, Esq., M.D.	July 4, 1857.

No. 24.—Names of Governors who attended Board Meetings during the two Years ended 31st March, 1861, with Dates of Appointment—*continued.*

Name.	Date of Appointment.
Limerick—*continued.*	
Michael R. Ryan, Esq.	1859.
William Spaight, Esq.	1860.
Heffernan Considine, Esq.	1861.
Londonderry.	
Thomas Scott, Esq., J.P., D.L.	1829.
Sir James Stewart, Bart., D.L.	,,
William Fenwick, Esq., J.P.	,,
John Harvey, Esq., J.P., D.L.	,,
W. H. Ash, Esq., J.P., D.L.	1830.
Lieutenant-Colonel Humphrey, J.P.	1832.
Rev. E. Bowen,	1834.
Sir R. Bateson, Bart., D.L.	1836.
J. V. Stewart, Esq., D.L.	,,
J. B. Beresford, Esq., D.L.	1839.
Rev. William M'Clure,	1845.
Lord Lifford,	,,
Sir H. Bruce, Bart., D.L.	1847.
William L. Browne, Esq., J.P.	1849.
Rev. B. B. Gough,	,,
A. J. R. Stewart, Esq., D.L.	1850.
A. Babington, Esq., J.P.	1852.
H. Nicholson, Esq., J.P.	1853.
Lord Bishop of Derry,	1854.
J. G. Bowen, Esq., J.P.	1855.
Thomas Batt, Esq., J.P.	,,
J. Ferguson, Esq., J.P.	1856.
W. Olpherts, Esq., J.P.	,,
Thomas Brooke, Esq., J.P.	,,
W. Sinclair, Esq.	,,
Francis Mansfield, Esq., J.P., D.L.	,,
Archdeacon of Derry,	1857.
Mayor of Derry,	1859.
Sir F. Heygate, Bart., M.P., D.L.	,,
R. P. Dawson, Esq., M.P., D.L.	,,
Dean of Derry,	1860.
A. Lyle, Esq., Lieutenant,	,,
Rev. W. Edwards,	,,
William Green, Esq.	–
John Nugent, Esq., M.D., *ex-officio*,	1852.
Geo. W. Hatchell, Esq., M.D., *ex-officio*,	1857.
Maryborough.	
Viscount De Vesci,	April 6, 1833.
Rev. Thomas Harpur,	,,
George Adair, Esq., J.P.	March 24, 1835.
R. M. Alloway, Esq., J.P.	,,
J. R. Price, Esq., J.P.	Feb. 2, 1841.
Rev J. T. Moore, J.P.	August 7, 1841.
R. S. Hawksworth, Esq., J.P.	April 12, 1846.
Right Hon. J. W. Fitzpatrick, D.L.	Oct. 9, 1850.
John Nugent, Esq., M.D., *ex-officio*,	April, 1852.
Rev. Dr. Taylor,	May 16, 1855.
D. Thompson, Esq., J.P.	April 25, 1856.
Geo. W. Hatchell, Esq., M.D., *ex-officio*,	July 4, 1857.
M. J. Sweetman, Esq., J.P.	Sept. 22, 1859.
G. Garvey, Esq., J.P., D.L.	Sept. 22, 1859.
T. Hackett, Esq., J.P., D.L.	,,
T. W. Trench, Esq., J.P.	,,
M. Dunn, Esq., M.P.	June 11, 1860.
Mullingar.	
M. E. Corbally, Esq., M.P.	July 8, 1854.
Edward MacEvoy, Esq., M.P.	,,
Right Rev. Dr. Cantwell,	,,
Sir Richard Levinge, Bart. M.P., D.L.	,,
William Pollard Urquhart, Esq., M.P.	,,
John C. Lyons, Esq., D.L.	,,
Earl Granard,	,,
Colonel Caulfield, J.P.	,,
Colonel F. S. Greville, M.P.	,,
John L. O'Farrell, Esq., D.L.	,,
Philip O'Reilly, Esq., D.L.	,,
John Shouldham, Esq., J.P.	,,
W. Bond, Esq., D.L.	,,
John Nugent, Esq., M.D.	,,
Robert Smith, Esq., D.L.	June 24, 1857.

Name.	Date of Appointment.
Mullingar—*continued.*	
George W. Hatchell, Esq., M.D.	July 4, 1857.
Thomas Smyth, Esq., J.P.	Nov. 19, 1860.
Omagh.	
Earl of Belmore,	Sept. 28, 1857.
Lord Claud Hamilton, M.P.	Sept. 10, 1852.
Right Hon. H. T. L. Corry, M.P.	,,
Hon. A. G. Stuart,	May 24, 1855.
Sir J. M. Stewart, Bart., D.L.	Nov. 18, 1859.
Samuel Galbraith, Esq., J.P.	Sept. 10, 1852.
Francis G. Gervais, Esq., J.P.	,,
Charles Eccles, Esq., J.P.	,,
Francis Ellis, Esq., J.P.	,,
Rev. H. Tottenham,	Oct. 14, 1852.
Samuel Vesey, Esq., D.L.	Sept. 10, 1852.
Charles R. Scott, Esq., J.P.	,,
William F. Black, Esq., J.P.	Sept. 28, 1857.
A. Ferguson Knox, Esq., J.P.	Jan. 28, 1860.
Rev. Lord A. Loftus,	Sept. 10, 1852.
Captain M. Archdall, J.P., M.P.	,,
Rev. J. Grey Porter,	,,
William H. Archdall, Esq.	,,
James Lendrum, Esq., J.P.	,,
John Grey V. Porter, Esq., J.P.	Sept. 10, 1852.
Robert Archdall, Esq., J.P.	,,
William Patterson, Esq.	,,
Maurice C. Maude, Esq., J.P.	Sept. 22, 1859.
John Nugent, Esq., M.D., *ex officio*,	1852.
Richmond.	
The Earl of Meath.	Sept. 6, 1830.
The Right Hon Frederick Shaw,	Sept. 8, 1830.
The Hon. and Very Rev. the Dean of St. Patrick's, H. Pakenham,	Feb. 24, 1844.
Sir George Hodson, Bart., D.L.	Feb. 15, 1847.
Michael Staunton, Esq., J.P.	,,
Thomas Hutton, Esq., D.L.*	,,
Very Rev. Dr. Yore,	,,
John Lentaigne, Esq., J.P.	,,
Viscount Gormanstown, D.L.	Oct. 19, 1848.
John Nugent, Esq., M.D.	April 26, 1852.
Laurence Waldron, Esq., M.P., D.L.	August 2, 1856.
George W. Hatchell, Esq.	July 4, 1857.
George Lindsay, Esq.	Feb. 21, 1860.
Sligo.	
Right Hon. John Wynne, D.L.	Sept. 10, 1852.
George Armstrong, Esq.	,,
Sir Robert Gore Booth, Bart., M.P., D.L.	,,
Lieutenant-Colonel Barrett, J.P.	,,
C. W. Cooper O'Hara, Esq., M.P.	,,
B. O. Cogan, Esq., J.P.	,,
Major Fiolliott, J.P.	,,
J. A. Holmes, Esq., J.P., D.L.	,,
F. M. Olpherts, Esq., J.P.	,,
P. O'Connor, Esq., J.P.	,,
William Phibbs, Esq., J.P.	Sept. 29, 1852.
E. Smyth, Esq., J.P.	Sept. 10, 1852.
Captain Wood, J.P.	,,
Colonel White, J.P.	,,
The Rt. Rev. Bishop Gillooly,	Nov. 19, 1860.
Waterford.	
Henry Denny, Esq., J.P.	Aug. 13, 1836.
Thomas Meagher, Esq., J.P.	Aug. 18, 1841.
Sir Benjamin Morris, D.L.	,,
James Keating, Esq., J.P.	Oct. 19, 1848.
Very Rev. Edward N. Hoare,	Dec. 8, 1851.
John Power, Esq.	Dec. 8, 1851.
Edward Roberts, Esq., J.P.	,,
W. M. Ardagh, Esq., J.P.	,,
Charles Newport, Esq., J.P.	Aug. 1, 1853.
Lieutenant-Colonel Roberts, J.P.	,,
Rev. M. Flynn,	June 17, 1854.
Members of Parliament for the City,	–
The Mayor,	–
John Nugent, Esq., M.D.	1852.
George W. Hatchell, Esq., M.D.	July 4, 1857.

* Resigned 9th October, 1860.

No. 25.—Table showing the Wages and Allowances of Attendants in District Asylums.

Asylum.	No. of each Class.	Class of Attendants.	Wages per head, per annum. £ s. d.	Estimated Annual Value of Allowances. £ s. d.	Nature of Allowances.
Armagh,	1	Male Attendant (and Gardener),	20 0 0	23 15 6	Residence, Clothing, and Rations.
	3	Male Attendants,	12 0 0	23 15 6	Ditto.
	1	Wardman,	12 0 0	20 10 0	Residence and Rations.
	1	Hall Porter,	10 0 0	23 15 6	Residence, Clothing, and Rations.
	1	Gatekeeper,	6 6 0	20 10 0	Residence and Rations.
	1	Nurse,	12 0 0	20 10 0	Ditto.
	1	Cook,	10 0 0	20 10 0	Ditto.
	3	Nurses,	9 0 0	20 10 0	Ditto.
	1	Laundress,	9 0 0	20 10 0	Ditto.
	2	Servants to Manager and Matron,	8 0 0	20 10 0	Ditto.
	2	Assistants in Laundry,	6 0 0	20 10 0	Ditto.
	2	Assistant Nurses,	6 0 0	20 10 0	Ditto.
	3	Ditto,	5 0 0	20 10 0	Ditto.
Ballinasloe,	1	Steward and Gardener,	20 0 0	20 0 0	Residence, Clothing, and Rations.
	1	Head Attendant,	20 0 0	12 10 0	Ditto.
	1	Infirmary Attendant,	17 0 0	12 10 0	Ditto.
	1	Male Attendant,	16 0 0	12 10 0	Ditto.
	4	Ditto,	14 0 0	12 10 0	Ditto.
	8	Ditto,	12 0 0	12 10 0	Ditto.
	2	Gate Porters,	12 0 0	20 0 0	Ditto.
	1	Hall Porter,	10 0 0	12 10 0	Ditto.
	1	General Workman,	10 0 0	12 10 0	Ditto.
	1	Head Female Attendant,	17 15 0	12 10 0	Ditto.
	1	Head Laundress,	13 15 0	12 10 0	Ditto.
	1	Female Infirmary Attendant,	11 15 0	12 10 0	Ditto.
	1	Cook,	11 15 0	12 10 0	Ditto.
	2	Female Attendants,	9 15 0	12 10 0	Ditto.
	2	Ditto,	8 15 0	12 10 0	Ditto.
	2	Assistant Laundresses,	9 15 0	12 10 0	Ditto.
	1	Hall, &c., Maid,	8 15 0	12 10 0	Ditto.
	1	Assistant Nurse,	7 15 0	12 10 0	Ditto.
	9	Ditto,	6 15 0	12 10 0	Ditto.
	1	Scullery-maid,	6 15 0	12 10 0	Ditto.
Belfast,	1	Attending Steam,	52 0 0	12 0 0	Rations.
	1	Jobbing Carpenter,	46 16 0	—	Nil.
	1	Land Steward and Gardener,	28 0 0	22 4 0	Rations, Clothing, &c.
	1	Hall Porter,	16 0 0	22 4 0	Ditto.
	2	Male Attendants,	21 0 0	44 8 0	Ditto.
	7	Ditto,	16 0 0	155 8 0	Ditto.
	1	Head Female Attendant,	20 0 0	18 0 0	Ditto.
	1	Night ditto,	16 0 0	18 0 0	Ditto.
	1	Cook,	14 0 0	18 0 0	Ditto.
	1	Laundress,	14 0 0	18 0 0	Ditto.
	1	Female Attendant,	13 0 0	18 0 0	Ditto.
	10	Ditto,	10 0 0	180 0 0	Ditto.
	1	House and Office Attendant,	10 0 0	18 0 0	Ditto.
	1	Assistant Cook,	10 0 0	18 0 0	Ditto.
	1	Assistant Laundress,	10 0 0	18 0 0	Ditto.
	7	Assistant Female Attendants,	8 0 0	126 0 0	Ditto.
	2	Ditto,	9 0 0	36 0 0	Ditto.
	1	Gate Porter,	15 0 0	22 4 0	Ditto.
Carlow,	1	Gardener,	18 0 0	21 0 0	Residence and Rations.
	1	Warder and Steward,	14 12 0	19 0 0	Ditto.
	4	Male Attendants,	12 12 0	19 0 0	Ditto.
	3	Male Deputy Attendants,	10 10 0	19 0 0	Ditto.
	1	Gatekeeper,	9 0 0	19 0 0	Ditto.
	1	Porter and Messenger,	12 0 0	19 0 0	Ditto.
	1	Female Cook,	10 0 0	16 10 0	Ditto.
	1	Laundress,	9 0 0	16 10 0	Ditto.
	4	Nurses,	8 8 0	15 0 0	Ditto.
	6	Assistant Nurses,	5 5 0	16 0 0	Ditto.
	1	Assistant Laundress,	6 5 0	16 0 0	Ditto.
	1	Ditto,	5 5 0	16 0 0	Ditto.
	1	Board-maid,	6 6 0	16 0 0	Ditto.
	1	Kitchen-maid,	5 5 0	16 0 0	Ditto.
					Premiums are given when merited.
Clonmel,	1	Gardener,	27 0 0	12 12 0	Food and Residence.
	1	Head Keeper,	24 0 0	16 16 0	Residence, Food, and Clothing.
	1	Watchman,	18 5 0	12 12 0	Diet.
	2	Male Attendants,	15 0 0	16 16 0	Residence, Food, and Clothing.
	1	Ditto,	13 13 0	16 16 0	Ditto.
	1	Gatekeeper,	13 4 4	16 16 0	Ditto.
	1	Male Hospital Attendant,	12 0 0	14 14 0	Ditto.
	2	Wardmen,	10 0 0	14 14 0	Ditto.
	2	Ditto,	8 8 0	14 14 0	Ditto.
	1	Hall Porter,	8 8 0	16 16 0	Ditto.
	1	Female Attendant (Hospital),	12 0 0	12 12 0	Residence, Diet, and Washing.
	1	Cook,	12 0 0	12 12 0	Ditto.
	2	Nurses,	10 0 0	12 12 0	Ditto.
	1	Laundress,	10 0 0	12 12 0	Ditto.
	1	Deputy Laundress,	6 6 0	12 12 0	Ditto.
	1	House-maid,	10 0 0	12 12 0	Ditto.
	5	Deputy Nurses,	6 6 0	12 12 0	Ditto.

No. 25.—Table showing the Wages and Allowances of Attendants in District Asylums—*con.*

Asylum.	No. of each Class.	Class of Attendants.	Wages per head, per annum. £ s. d.	Estimated Annual Value of Allowances. £ s. d.	Nature of Allowances.
Cork,	1	Gatekeeper,	52 0 0	4 10 0	Fuel and Light.
	1	Watchman,	21 5 10	—	None.
	1	Furnace Caretaker,	21 5 10	11 0 0	Clothing and Rations.
	2	Tradesmen (Tailor and Shoemaker),	15 12 0	19 10 0	Residence, Food, and Clothing.
	4	Male Attendants,	14 8 0	19 10 0	Ditto.
	15	Assistant Attendants,	10 16 0	19 10 0	Ditto.
	1	Male Cook,	14 0 0	15 0 0	Ditto.
	1	Assistant Cook,	6 0 0	15 0 0	Ditto.
	3	Male Servants (Whitewasher, Messenger, and Sweeper),	7 0 0	15 0 0	Ditto.
	1	Barber,	8 0 0	15 0 0	Ditto.
	1	Female Attendant (Infirmary Nurse),	14 8 0	15 0 0	Ditto.
	1	Laundress,	12 19 2	15 0 0	Ditto.
	2	Assistant Laundress,	6 0 0	15 0 0	Ditto.
	3	Female Attendants,	10 16 0	15 0 0	Ditto.
	18	Nurses,	6 0 0	15 0 0	Ditto.
	1	Kitchen-maid,	7 0 0	15 0 0	Ditto.
	1	Boardroom Servant,	7 0 0	15 0 0	Ditto.
Kilkenny,	1	Gardener,	27 7 6	—	—
	1	Gatekeeper,	18 0 0	5 0 0	Clothes and Vegetables.
	1	Hall Porter,	12 0 0	17 0 0	Residence and Diet.
	4	Male Attendants,	12 0 0	17 0 0	Ditto.
	1	Ditto,	11 0 0	20 0 0	Ditto.
	2	Ditto,	10 10 0	{16 0 0 {13 0 0	Ditto. Ditto.
	1	Ditto,	9 0 0	17 0 0	Ditto.
	1	Ditto,	8 0 0	18 0 0	Ditto.
	1	Female Attendant,	11 0 0	15 0 0	Ditto.
	2	Ditto,	9 0 0	15 0 0	Ditto.
	3	Ditto,	7 10 0	15 0 0	Ditto.
	1	Cook,	19 0 0	15 0 0	Ditto.
	1	Laundress,	9 0 0	15 0 0	Ditto.
	1	Wards-maid,	8 0 0	15 0 0	Ditto.
	1	Hall-maid,	6 0 0	15 0 0	Ditto.
	1	Kitchen-maid,	5 0 0	15 0 0	Ditto. Premiums are given when merited.
Killarney,	1	Head Attendant,	30 0 0	18 0 0	Rations and Clothing.
	1	Attendant,	15 0 0	15 0 0	Ditto.
	2	Ditto,	13 0 0	15 0 0	Ditto.
	1	Ditto,	11 0 0	15 0 0	Ditto.
	3	Ditto,	9 0 0	15 0 0	Ditto.
	1	Stoker,	26 0 0	—	—
	1	Agriculturist,	15 0 0	12 0 0	Rations.
	1	Ploughman,	16 18 0	5 0 0	Ditto.
	1	Guide for Horse,	15 12 0	—	—
	1	Hall Porter,	24 14 0	3 0 0	Clothing.
	1	Deputy Matron,	16 0 0	13 0 0	Rations.
	2	Nurses,	10 0 0	12 5 0	Rations and Clothing.
	2	Ditto,	9 0 0	12 5 0	Ditto.
	1	Ditto,	8 0 0	12 5 0	Ditto.
	3	Ditto,	6 0 0	12 5 0	Ditto.
	1	Gate Portress,	10 0 0	12 5 0	Ditto.
	1	Cook,	10 0 0	12 5 0	Ditto.
	1	Laundress,	7 0 0	12 5 0	Ditto.
	1	Ditto,	6 0 0	12 5 0	Ditto.
	1	House-maid,	5 0 0	12 5 0	Ditto.
	1	Ditto,	4 0 0	12 5 0	Ditto.
Limerick,	1	Steward and Gardener,	30 0 0	—	—
	1	Carpenter,	26 16 0	10 12 11	Rations.
	1	Gatekeeper,	25 0 0	3 0 0	Suit of Clothes.
	1	Ditto at Back Lodge,	20 0 0	3 0 0	Ditto.
	1	Hall Porter,	12 12 0	13 10 0	Rations and a Suit of Clothes.
	1	Stoker,	16 16 0	10 12 11	Rations.
	10	Male Attendants,	16 16 0	13 10 0	Rations and Clothing.
	1	Cook,	10 0 0	11 7 10	Rations and a Dress.
	1	Laundress,	10 0 0	11 7 10	Ditto.
	4	Assistant Laundresses,	6 6 0	10 12 11	Rations.
	7	Nurses,	8 8 0	11 7 11	Diet and Clothing.
	9	Assistant Nurses,	6 6 0	10 12 1	Ditto.
	1	Manager's Servant,	8 8 0	11 7 11	Rations and a Dress.
	1	Matron's ditto,	6 6 0	—	Rations.
	1	Hall-maid,	6 6 0	11 7 11	Rations and a Dress.
	2	Ward-women,	8 8 0	11 7 11	Ditto.
	7	Assistant ditto,	6 6 0	10 12 11	Rations.
Londonderry,	1	Gatekeeper,	9 0 0	21 2 10	Rations, Clothes, &c.
	1	Gardener,	18 3 0	21 2 10	Ditto.
	1	Hall Porter,	14 14 0	21 2 10	Ditto.
	1	Weaver,	14 14 0	21 2 10	Ditto.
	1	Shoemaker,	14 14 0	21 2 10	Ditto.
	1	Farm Manager,	14 14 0	21 2 10	Ditto.
	2	Keepers,	14 14 0	21 2 10	Ditto.
	1	Keeper,	13 13 0	21 2 10	Ditto.
	5	Female Nurses,	9 9 0	19 11 11	Ditto.

No. 25.—Table showing the Wages and Allowances of Attendants in District Asylums—*con.*

Asylum.	No. of each Class.	Class of Attendants.	Wages per head, per annum. £ s. d.	Estimated Annual Value of Allowances. £ s. d.	Nature of Allowances.
Londonderry, *continued.*	1	Hospital Nurse,	9 9 0	19 11 11	Rations, Clothes, &c.
	1	Night Nurse,	9 9 0	19 11 11	Ditto.
	13	Assistant Nurses,	5 5 0	18 14 7	Ditto.
	1	Cook,	9 9 0	19 11 11	Ditto.
	1	Laundress,	9 9 0	19 11 11	Ditto.
	2	Assistant ditto,	5 5 0	18 14 7	Ditto.
	1	Office-maid,	5 5 0	18 14 7	Ditto.
	1	Physician's Servant,	6 6 0	19 11 11	Ditto.
	1	Farm Gatekeeper,	4 0 0	4 0 0	Free house.
Maryborough	1	Gardener,	40 0 0	—	—
	1	Gatekeeper,	10 0 0	10 0 0	Rations.
	1	Messenger,	14 1 0	18 13 0	Clothing, Diet, and Residence.
	1	Keeper,	14 1 0	18 13 0	Ditto.
	3	Keepers,	13 0 0	18 13 0	Ditto.
	4	Assistant Keepers,	9 17 0	18 13 0	Ditto.
	3	Ditto,	8 16 0	18 13 0	Ditto.
	1	Nurse,	9 0 0	14 1 0	Ditto.
	2	Ditto,	7 7 0	14 1 0	Ditto.
	2	Ditto,	6 6 0	14 1 0	Ditto.
	5	Deputy Nurses,	5 5 0	14 1 0	Ditto.
	2	Ditto,	4 4 0	14 1 0	Ditto.
	1	Cook,	7 7 0	14 1 0	Ditto.
	1	Laundress,	7 7 0	14 1 0	Ditto.
	1	Laundry-maid,	4 4 0	14 1 0	Ditto.
	1	Ditto,	4 0 0	14 1 0	Ditto.
	1	House Servant,	5 5 0	14 1 0	Ditto.
Mullingar,	1	Gardener and Gatekeeper,	42 0 0	—	—
	1	Storekeeper,	18 0 0	18 8 10	Residence, Rations, and Clothing.
	1	Keeper,	17 0 0	18 8 10	Ditto.
	1	Ditto,	16 0 0	18 8 10	Ditto.
	7	Ditto,	14 0 0	18 8 10	Ditto.
	1	Porter,	14 0 0	18 8 10	Ditto.
	1	Messenger,	6 0 0	18 8 10	Ditto.
	1	Head Nurse,	24 0 0	17 8 10	Ditto.
	9	Nurses,	8 0 0	17 8 10	Ditto.
	1	Cook,	10 10 0	17 8 10	Ditto.
	1	Laundress,	10 10 0	17 8 10	Ditto.
	1	Assistant ditto,	6 6 0	17 8 10	Ditto.
	1	Hall maid,	7 6 0	17 8 10	Ditto.
	1	Kitchen-maid,	6 4 0	17 8 10	Ditto.
	1	Manager's Servant,	15 0 0	15 8 10	Ditto.
Omagh,	1	Land Steward,	30 0 0	15 1 6	Rations, Fuel, and Light.
	1	House Steward,	25 0 0	14 9 2	Rations and Clothes.
	1	Gatekeeper,	18 5 0	6 5 11	1 lb. of Bread daily and Clothes.
	1	Hall Porter,	18 0 0	14 9 2	Rations and Clothes.
	1	Attendant (a Carpenter),	30 0 0	14 9 2	Ditto.
	4	Ditto,	16 0 0	14 9 2	Ditto.
	5	Ditto,	14 0 0	14 9 2	Ditto.
	1	Fireman,	7 0 0	14 9 2	Ditto.
	1	Post-boy,	2 0 0	14 2 6	Ditto.
	1	Cook,	12 0 0	12 18 2	Ditto.
	1	Laundress,	12 0 0	12 18 2	Ditto.
	4	Nurses,	12 0 0	12 18 2	Ditto.
	1	Ditto,	11 0 0	12 18 2	Ditto.
	3	Ditto,	10 0 0	12 18 2	Ditto.
	1	Kitchen-maid,	8 0 0	11 17 4	Ditto.
	10	House-maids,	6 0 0	11 17 4	Ditto.
Richmond,	1	Male Attendant,	21 0 0	33 5 5	Clothing, Rations, Fuel, Light, and
	13	Ditto,	16 14 7	33 5 5	Ditto. [Washing.
	11	Ditto,	12 0 0	33 5 5	Ditto.
	1	Hall Porter,	18 18 0	33 5 5	Ditto.
	1	Ditto,	12 0 0	33 5 5	Ditto.
	2	Gate Porters,	16 14 7	33 5 5	Ditto.
	1	Carter,	16 14 7	33 5 5	Ditto.
	2	Barbers, and assistants in kitchen,	16 14 7	33 5 5	Ditto.
	1	Gardener,	30 0 0	33 5 5	Ditto.
	1	Messenger,	16 14 7	33 5 5	Ditto.
	1	Tailor,	24 0 0	33 5 5	Ditto.
	1	Shoemaker,	24 0 0	33 5 0	Ditto.
	1	Carpenter,	30 0 0	26 13 9	Ditto.
	1	Plumber,	35 0 0	26 13 9	Ditto.
	1	Infirmary Matron,	30 0 0	81 11 9	Ditto.
	1	Head Nurse,	24 0 0	60 0 6	Ditto.
	1	Nurse,	12 0 0	28 0 0	Ditto.
	10	Ditto,	8 0 0	28 0 0	Ditto.
	26	Deputy Nurses,	6 0 0	28 0 0	Ditto.
	1	Cook,	16 0 0	28 0 0	Ditto.
	1	Ditto,	12 0 0	28 0 0	Ditto.
	2	Hall-maids,	6 0 0	28 0 0	Ditto.
	1	House-maid,	6 0 0	28 0 0	Ditto.
	1	Laundress,	14 0 0	28 0 0	Ditto.
	2	Laundry-maids,	10 0 0	28 0 0	Ditto.
	1	Store-maid,	6 0 0	28 0 0	Ditto.
	2	Kitchen-maids,	6 0 0	28 0 0	Ditto.

No. 25.—Table showing the Wages and Allowances of Attendants in District Asylums—*con.*

Asylum.	No. of each Class.	Class of Attendants.	Wages per head, per annum. £	s.	d.	Estimated Annual Value of Allowances. £	s.	d.	Nature of Allowances.
Sligo, . .	1	Steward and Gardener, ...	30	0	0	30	0	0	Board, Washing, Fuel, and Light.
	1	Gate Porter, ...	31	4	0	15	0	0	Clothes, Fuel, and Light.
	1	Hall Porter and Painter, . . .	20	0	0	26	0	0	Board, Washing, Clothes, Fuel, and Light.
	1	Attendant and Shoemaker, . . .	20	0	0	26	0	0	Ditto.
	1	Stoker, ...	12	0	0	26	0	0	Ditto.
	2	Male Attendants, ...	15	0	0	26	0	0	Ditto.
	1	Ditto, ...	14	0	0	26	0	0	Ditto.
	1	Ditto, ...	12	0	0	26	0	0	Ditto.
	2	Ditto, ...	10	0	0	26	0	0	Ditto.
	1	Cook, ...	12	0	0	24	0	0	Ditto.
	1	Laundress, ...	12	0	0	24	0	0	Ditto.
	1	Assistant ditto, ...	6	0	0	24	0	0	Ditto.
	1	Female Attendant, ...	10	0	0	24	0	0	Ditto.
	1	Ditto, ...	9	0	0	24	0	0	Ditto.
	3	Ditto, ...	8	0	0	24	0	0	Ditto.
	2	Deputy Attendant, ...	7	0	0	24	0	0	Ditto.
	1	Ditto, ...	6	0	0	24	0	0	Ditto.
	1	Hall-maid, ...	6	0	0	24	0	0	Ditto.
	1	Scullery-maid, ...	4	0	0	24	0	0	Ditto.
Waterford, .	1	Gardener, ...	25	0	0	18	18	5	Residence, Clothing, and Rations.
	1	Gatekeeper, ...	12	0	0	18	18	5	Ditto.
	1	Hall Porter, ...	12	0	0	18	18	5	Ditto.
	1	Attendant, ...	20	0	0	18	18	5	Ditto.
	1	Ditto, ...	15	0	0	18	18	5	Ditto.
	1	Ditto, ...	14	0	0	18	18	5	Ditto.
	3	Ditto, ...	12	0	0	18	18	5	Ditto.
	4	Nurses, ...	6	6	0	17	8	5	Ditto.
	6	Assistant Nurses, ...	4	4	0	17	8	5	Ditto.
	1	Cook, ...	7	7	0	17	8	5	Ditto.
	1	Laundress, ...	7	7	0	17	8	5	Ditto.
	1	Assistant ditto, ...	4	4	0	17	8	5	Ditto.

No. 26.—Dietary in use in District Asylums.

Armagh District Asylum.

Ordinary.—Breakfast—males, 1 quart stirabout, $\frac{5}{8}$ quart new milk; females, 1 pint stirabout, $\frac{5}{8}$ quart new milk. Dinner—males, 1 quart soup, $\frac{1}{2}$ lb. best bread; females, 1 pint soup, $\frac{1}{2}$ lb. best bread. Supper—males, $\frac{1}{2}$ lb. best bread, $\frac{5}{8}$ quart new milk; females, $\frac{1}{2}$ lb. best bread, $\frac{5}{8}$ quart new milk.

Extra.—Breakfast—males and females, tea, 2 oz. per week, and sugar.

Hospital diet.—Ale, wine, brandy, eggs, tea, when required.

Ballinasloe District Asylum.

Ordinary.—Breakfast—1 pint stirabout, $\frac{1}{2}$ quart mixed milk. $\frac{1}{2}$ lb. bread is added to this dietary for the working patients. Dinner—$\frac{1}{4}$ stone potatoes, $\frac{1}{2}$ quart mixed milk, on three days of the week; 1 quart soup, $\frac{1}{2}$ lb. bread, on four days of the week. Supper—1 pint cocoa, 6 oz. bread. 1 pint of stirabout is sometimes added to each of these dietaries, and the females who are employed in the laundry receive 6 oz. bread extra, and the cocoa that remains from the supper of the previous evening.

Middle.—Breakfast—1 pint cocoa, $\frac{1}{2}$ lb. bread. Dinner—$\frac{1}{2}$ lb. bread, $\frac{1}{2}$ quart new milk, $\frac{1}{2}$ lb. meat on three days of the week; $\frac{1}{4}$ lb. bread, 1 lb. potatoes, on four days of the week. Supper—1 pint cocoa, 6 oz. bread.

Milk diet.—Breakfast—$\frac{1}{2}$ lb. bread, $\frac{1}{4}$ quart new milk. Dinner—$\frac{1}{2}$ lb. bread, $\frac{1}{2}$ quart new milk. Supper—6 oz. bread, 1 pint cocoa.

Belfast District Asylum.

Ordinary.—Breakfast—stirabout and milk. Dinner—bread, meat, and broth six days in the week; bread and milk one day in the week. Supper—bread and milk in summer, and stirabout and milk in the winter.

Extra.—Breakfast—tea, coffee, eggs, broiled meat, bread, and butter. Dinner—strong soup, rice, arrowroot, beefsteak. Supper—tea, coffee, bread, and butter.

Hospital diet.—Tea, coffee, broiled meat, bread and milk, arrowroot, rice, eggs, and porter, ale, wine, spirits. The diet in ordinary is served out to all the inmates—extra and hospital diet is ordered according to circumstances by the Medical Officers, and varies from day to day.

Carlow District Asylum.

Ordinary.—Breakfast—8 oz. of oatmeal in stirabout, with $\frac{1}{2}$ quart of new milk. Dinner—males, 11 oz. of bread, with a quart of good soup, or a pint of mixed milk; females, 8 oz. of bread, same soup or milk. Supper—8 oz. of bread with a pint of cocoa.

Extra.—Breakfast—whenever a patient seems to require additional food it is given, or bread and milk or tea substituted for stirabout.

Hospital diet.—Every thing necessary for the patient is liberally supplied or ordered by the physicians. Wine, porter, spirits, tea, eggs, meat, arrowroot, &c., &c. These of course vary every day; there are generally from 15 to 20 males and 12 to 14 women more or less on extra diet, or on a modified diet. Meat is always given cut up in the soup.

Clonmel District Asylum.

Ordinary.—Breakfast—8 oz. cutlins, $\frac{1}{4}$ oz. rice, in stirabout, $\frac{1}{2}$ imperial pint new milk; 8 oz. bread for those with whom stirabout disagrees. Dinner—68 lbs. beef, for 130 patients, made into soup, with vegetables, rice, oatmeal, and peas; 1 imperial pint of this soup for each 4 days each week; 12 oz. bread for working men, and 8 oz. for idle men and for women daily; 1 pint of milk and rice gruel 3 days weekly. Supper—men get 8 oz., women, 6 oz. each, $\frac{1}{2}$ pint imperial new milk.

The laundry patients, on Mondays and Tuesdays, at

12 o'clock, in consequence of the labour there on these two days, get ½ pint of porter each.

Hospital diet.—Breakfast—¼ oz. tea, breakfast and supper each; 1½ oz. sugar, breakfast and supper each; 6 oz. bread, ¼ oz. butter, each. Average number, 5 males, 7 females. Dinner—Beef-tea or mutton chop, 8 oz., 6 oz. bread. Supper—as at breakfast, whey when required by sick.

Cork District Asylum.

Ordinary.—Breakfast—7 oz. of oatmeal in stirabout 1 pint of good sweet boiling milk. Dinner—¾ lb. bread for males and ½ lb. for females, 6 oz. of beef and 1½ pint soup. Supper—6 oz. of bread, 1 pint of good sweet boiling milk.

Extra.—Breakfast—½ lb. of bread each, with 1 pint of cocoa, 1 pint of tea, or 1 pint of coffee. Dinner—½ lb. of mutton chop, or ½ lb. of beefsteak, and 1 pint of boiling milk. Supper—1 pint of tea, of coffee, or cocoa.

Hospital diet.—Full diet—14 oz. of bread, 3 lbs. of potatoes, ½ lb. meat, 2 pints of tea or cocoa. Low diet—8 oz. of bread, 2 pints of tea, 1 pint of milk. No. 2 diet—1 ⅝ lb. of bread, 2 pints of cocoa, ½ lb. of meat. No. 3 diet—1⅝ lb. of bread, 2 pints of tea, ½ lb. of meat.

Kilkenny District Asylum.

Ordinary.—Breakfast—6 ½ oz. oatmeal and 1 oz. rice made into stirabout, and ⅔ of a pint of new milk, for 6 days; 8 oz. bread and ⅔ pint new milk on Sundays. Dinner—8 oz. bread and ⅔ pint new milk on Mondays, Wednesdays, Fridays, and Saturdays; Sundays, Tuesdays, Thursdays, at the rate of 40 lbs. beef per 100 patients, to be boiled into soup; 1 pint of this soup to be given to each patient, with the usual quantity of bread. Supper—6 oz. bread and ⅔ pint of new milk.

Extra.—Breakfast—same as ordinary. Dinner—12 oz. bread and 1 pint milk on 4 days, and soup, as above, on other 3 days. Supper—8 oz. bread and ⅔ pint new milk.

Hospital diet.—1st—low fever diet—4 oz. bread and 3 pints whey daily. 2nd—bread diet—breakfast, 8 oz. bread, 1 pint new milk; dinner, 8 oz. bread 1 pint new milk; supper, 8 oz. bread, 1 pint new milk. 3rd—tea diet—breakfast, 6 oz. bread, 1 pint tea; dinner, ordinary; supper, ordinary. 4th—rice diet—breakfast, 4 oz. bread, 1 pint milk; dinner, 4 oz. bread, 2 oz. rice, 1 pint milk; supper, 4 oz. bread, 1 pint milk. 5th—meat diet—breakfast, 8 oz. bread, 1 pint tea; dinner, 8 oz. bread, 8 oz. meat; supper, 8 oz. bread, 1 pint milk. 6th—full bread diet—breakfast, 12 oz. bread, 1 pint tea; dinner, 12 oz. bread, 1 pint milk; supper, 12 oz. bread, 1 pint milk.

Killarney District Asylum.

Ordinary.—Breakfast—males, 1 lb. second quality bread and 1½ pints of tea; females, 10⅔ oz. second quality bread and 1 pint of tea. Dinner—males, ½ lb. second quality bread and 10 oz. beef, free from bone; females, ½ lb. second quality bread and 8 oz. beef, free from bone. Such vegetables as the garden furnishes according to the season. Supper—males and females, ½ lb. second quality bread and 1 pint of tea.

Extras at dinner.—1 pint of porter, 1 glass whisky.

Limerick District Asylum.

Ordinary.—Breakfast—7 oz. of Indian meal made into stirabout; 12 oz. of bread for the meal and 8 oz. of bread for female patients, new milk and tea. Dinner—12 oz. of beef boiled into soup, 12 oz. of bread or 3 lbs. of potatoes for males, and 2⅔ lbs. of potatoes, or 8 oz. bread, for females; milk. Supper—6 oz. of bread and ½ pint of new milk for male and female patients.

Extra.—Breakfast—eggs, butter. Dinner—roast beef and mutton.

Hospital diet.—Wine, porter, spirits, eggs, butter, tea.

Londonderry District Asylum.

Ordinary.—Breakfast—7 oz. meal made into porridge, and ⅓ quart new milk. Dinner—Sundays and Thursdays—males, 1 quart soup and 12 oz. bread; females, 1 quart soup and 8 oz. bread. Tuesdays and Saturdays—males, 1 quart ox-head soup and 12 oz. bread; females, 1 quart ox-head soup and 8 oz. bread. Mondays, Wednesdays, and Fridays—males, 1 quart vegetable soup and 12 oz. bread; females, 1 quart vegetable soup and 8 oz. bread. Supper—5 oz. meal made into porridge, with ⅓ quart new milk.

Hospital diet.—1 lb. 8 oz. bread and 1 quart new milk daily.

The soup allowed on Sunday and Thursday is made from 40 lbs. of beef, without bone, for 100 quarts; and that used on Tuesday and Saturday, from ox-heads, 1 to 25 quarts. The soup contains meal, rice, peas, and garden vegetables. Any extra articles of diet thought necessary for the sick or delicate are furnished by order of the physicians.

Maryborough District Asylum.

Ordinary.—Breakfast—8 oz. meal in stirabout, ⅓ quart of new milk. Dinner (four days)—males, 12 oz. bread, or 4 lbs. potatoes; females, 10 oz. bread, or 3½ lb. potatoes, milk; (three days)—males, 12 oz. bread, or 3½ lb. potatoes, ½ beef in soup; females, 10 oz. bread, or 3 lb. potatoes. Supper, 6 oz. bread, ⅓ quart new milk.

Extra.—10 oz. bread, 1 pint new milk; 8 oz. bread, 1 pint new milk. One oz. butter each to 10 patients amongst these numbers, and 13 eggs divided. Dinner—Full diet, 1 lb. beef, 1 pint beer, 12 oz. bread; half full, ½ lb. beef, ½ pint beer, 12 oz. bread; bread diet, 30 oz. bread, 1⅓ of new milk daily Supper.—All suppers are ordinary, except very few, in flummery or rice. Broth diet, 28 oz. bread, 1 lb. meat in beef tea, daily.

Hospital diet.—No definite diet for the sick. Gruel, broth, arrowroot, eggs, spirits, wine, tea, as the physician prescribes.

Mullingar District Asylum.

Ordinary.—Breakfast (six days in the week), 8 oz. oatmeal made into stirabout, 1 pint new milk. (One day), 8 oz. bread, 1 pint new milk. Dinner (four days in the week), 8 oz. bread, 8 oz. meat; (three days in the week), 10 oz. bread, and 1 pint new milk. Supper—males, 8 oz. bread, 1 pint cocoa, daily; females, 6 oz. bread, 1 pint cocoa, daily.

Extra.—Breakfast—males and females, 8 oz. bread, 1 pint tea.

Omagh District Asylum.

Ordinary.—Breakfast—9 oz. meal made into stirabout, and ⅓ quart sweet milk. Dinner—Sundays, Mondays, and Saturdays—males, ½ stone potatoes, and 8 oz. beef; females, 6 oz. Tuesdays—4 oz. rice and 4 oz. bread. Wednesdays and Thursdays—½ stone potatoes, and 1 pint soup. Tuesdays—males, 1 pint sweet milk and 12 oz. bread; females, 8 oz. Supper—7 oz. meal, made into stirabout, and ⅓ quart sweet milk.

Extra.—Breakfast—males—No. 1, ¼ oz. tea, ⅝ oz. sugar, ½ nag. sweet milk, 8 oz. bread; females, 6 oz. No 2, ¾ oz. cocoa, sugar, milk, and bread, as above. No. 3, ¼ oz. coffee, sugar, milk, and bread as in No. 1. No. 4, 1 pint milk, and bread as in No. 1. Dinner—No. 1, 10 oz. mutton chop, ½ stone potatoes. Males—No. 2, 1 pint milk, and 12 oz. bread; females, 8 oz. No. 3, 4 oz. rice and 4 oz. bread. Supper.—Same as breakfast.

Hospital diet.—Regulated according to circumstances of the case.

Sligo District Asylum.

Ordinary.—Breakfast—1 quart stirabout, ⅓ quart new milk. Dinner—Sundays—Irish stew. Tuesdays, Thursdays, and Saturdays—1 quart of meat soup, with vegetables, &c., and 3 lb. potatoes or 12 oz. bread for working men, and 8 oz. bread for women and idle men. Mondays, Wednesdays, and Fridays—1 pint rice-milk, and 12 oz. bread for working men; 1 pint rice-milk and 8 oz. bread for women and idle men. Supper—1 pint milk, porridge, or cocoa, and ½ lb. bread, working men; 1 pint milk, porridge, or cocoa, and 6 oz. bread for women and idle men.

Extra.—Breakfast—½ lb. bread, with 1 pint of tea, milk, or coffee. Dinner—½ lb. bread, or 3 lbs. potatoes, with ½ lb. chop or steak; or ½ lb. bread, with 1 pint of milk, beef-tea, or rice-milk. Supper—6 oz. bread, with 1 pint tea or milk.

Hospital diet.—Whey, arrowroot, beef, tea, wine, porter, or other medical comforts as may be ordered by the Medical Officers, with or without any of the foregoing diets.

6 oz. oatmeal, 1½ oz. rice, to 1 quart stirabout. 7 oz. meat in Irish stew, with 3 lbs. potatoes, &c., for each patient. Meat soup in proportion of an ox-head, 6 lbs. beef, 3 lbs. split peas or oatmeal, with vegetables, for 32 patients. 2 oz. rice, ⅜ oz. flour, and ½ pint milk for each pint rice-milk. 1½ oz. oatmeal, ¼ oz. flour, and 1 naggin milk to 1 pint of porridge.

Richmond District Asylum.

Ordinary.—Breakfast—1 quart stirabout and 1 pint milk, or 1 pint tea and 8 oz. bread; 5 oz. oatmeal and 1½ oz. rice to each quart stirabout; 1 oz. tea and 3½ oz. sugar to 7 patients. Dinner—½ lb. meat, 1 pint soup, 10 oz. bread, for males and females. Potatoes, when in season, are substituted for dinner-bread, 2 lbs. to each patient, other vegetables about ½ lb.

Extra.—Beef-tea, 1 pint. 4 lbs. beef allowed for 6 pints beef-tea. Supper—1 pint cocoa, 8 oz. bread, or 1 pint tea, 8 oz. bread. ½ oz. cocoa, or ¼ oz. tea and ½ oz. sugar allowed to each patient.

Waterford District Asylum.

Ordinary.—Breakfast—6½ oz. oatmeal and rice in 1 quart stirabout, and ⅔ pint new milk; bread, 8 oz. for males and 7 oz. for females. Dinner—beef, 8 oz. bread, 10 oz., males, and 7 oz. females; new milk. Supper—males, 8 oz. bread; females, 7 oz., and 1 pint cocoa; new milk.

Extra.—Breakfast—butter, cocoa, tea, and eggs. Dinner—mutton and pork, tea.

Hospital diet.—Beer, punch, and wine.

APPENDIX C.

No. 1.—Return of all Persons in custody in Gaols during the Two Years ending 31st March, 1860 and 1861, who were Acquitted of Offences on the ground of Insanity.

Gaol.	Total.			Nature of Offence.														Discharged.			Removed to Asylum by Warrant of Lord Lieutenant.			Died.			Remaining in Gaol on 31st March.		
				Homicide, or attempts at Homicide.			Felony.			Assault.			Violently Threatening.			Larceny.														
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Carlow,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Castlebar,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
Clonmel,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Cork County,	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1
Downpatrick,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Galway County,	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
Londonderry,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Maryborough,	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–
Naas,	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Wexford,	1	1	2	–	–	–	–	–	–	1	1	2	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	1	–	1
Total,	8	3	11	1	–	1	1	–	1	5	2	7	1	–	1	–	1	1	2	–	2	2	2	4	–	–	–	4	1	5
1861.																														
Carlow,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Carrick-on-Shannon,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Castlebar,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Clonmel,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Cork County,	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–
Downpatrick,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Kilmainham,	2	–	2	–	–	–	–	–	–	1	–	1	–	–	–	1	–	1	–	–	–	2	–	2	–	–	–	–	–	–
Lifford,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Londonderry,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Naas,	2	–	2	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	1	–	–	–	1	–	1
Sligo,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Wexford,	2	–	2	–	–	–	–	–	–	2	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	2
Total,	14	1	15	4	–	4	–	–	–	7	–	7	–	–	–	2	1	3	–	–	–	9	1	10	–	–	–	5	–	5

No. 2.—Return of Persons committed to Gaols in default of Bail to keep the Peace, during the Two Years ending 31st March, 1860 and 1861, who were Insane at the time of committal, or became Insane subsequent thereto.

Gaol.	Total.			Insane on Committal.			Became Insane subsequent to Committal.			Discharged.			Removed to Asylum by Warrant of Lord Lieutenant.			Died.			Remaining in Gaol on 31st March.		
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Cork County,	1	2	3	1	2	3	–	–	–	–	–	–	1	2	3	–	–	–	–	–	–
Kilmainham,	1	1	2	1	–	1	–	1	1	–	–	–	1	1	2	–	–	–	–	–	–
Longford,	2	–	2	2	–	2	–	–	–	–	–	–	2	–	2	–	–	–	–	–	–
Sligo,	1	–	1	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Total,	5	3	8	5	2	7	–	1	1	–	–	–	5	3	8	–	–	–	–	–	–
1861.																					
Cork County,	3	2	5	3	2	5	–	–	–	–	–	–	3	2	5	–	–	–	–	–	–
Kilkenny County,	–	1	1	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–
Londonderry,	–	1	1	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–
Longford,	1	1	2	1	1	2	–	–	–	–	–	–	1	1	2	–	–	–	–	–	–
Total,	4	5	9	4	5	9	–	–	–	–	1	1	4	4	8	–	–	–	–	–	–

No. 3.—Return of all Persons confined in Gaols during the Two Years ending 31st March, 1860 and 1861, who were found to be Insane on Arraignment, and incapable of pleading.

Gaol.	Total.			Nature of Offence.																		Discharged.			Removed to Asylum by Warrant of Lord Lieutenant.			Died.			Remaining in Gaol.		
				Homicide.			Felony.			Assault.			Larceny.			Burglary.																	
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Castlebar,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	1	–	1	–	–	–	–	–	–
Cavan,	2	–	2	–	–	–	–	–	–	2	–	2	–	–	–	–	–	–	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–
Clonmel,	2	–	2	–	–	–	–	–	–	2	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	2
Cork City,	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
Downpatrick,	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Kilkenny County,	2	–	2	–	–	–	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	1	–	1
Kilmainham,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Londonderry,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Maryborough,	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–
Omagh,	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
Sligo,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Trim,	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Wexford,	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Total,	14	2	16	–	1	1	3	–	3	9	1	10	1	–	1	1	–	1	2	–	2	5	1	6	–	–	–	7	1	8			
1861.																																	
Clonmel,	2	–	2	–	–	–	–	–	–	2	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	–	2			
Cork,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1			
Downpatrick,	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–			
Ennis,	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–			
Kilkenny County,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–			
Kilmainham,	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–			
Lifford,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1			
Londonderry,	2	–	2	–	–	–	–	–	–	1	–	1	1	–	1	–	–	–	2	–	2	–	–	–	–	–	–	–	–	–			
Nenagh,	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1			
Sligo,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–			
Tralee,	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–			
Trim,	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–			
Tullamore,	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–			
Wexford,	1	1*	2	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	1	1	–			
Total,	13	4	17	1	–	1	1	–	1	7	2	9	4	1	5	–	–	–	3	1	4	6	1	7	–	1	1	4	1	5			

* Attempting to commit suicide.

No. 4.—Return of all Persons under Sentence of Imprisonment or Transportation who became Insane in Gaols during the Two Years ending 31st March, 1860 and 1861.

Gaol.	Total.			Nature of Offence.															Removed to Asylum by Warrant of Lord Lieutenant.			Discharged.			Remaining in Gaol.		
				Assault.			Felony.			Injuring Property.			Disorderly Conduct.			Larceny.											
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Kilmainham,	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	1	–	–	–
Nenagh,	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–	1	–	1
Tralee,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Wicklow,	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Total,	3	1	4	1	–	1	1	–	1	–	–	–	–	–	–	1	1	2	2	–	2	–	–	–	1	1	2
1861.																											
Kilmainham,	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	1	1	–	–	–
Naas,	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1*
Nenagh,	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	1	–	1	–	–	–
Omagh,	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1
Roscommon,	–	1	1	–	–	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	1	1
Sligo,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–	–	–	–
Tralee,	1	1	2	1	–	1	–	–	–	–	–	–	–	–	–	–	1	1	1	1	2	–	–	–	–	–	–
Trim,	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	1†
Total,	5	4	9	3	–	3	1	–	1	–	1	1	–	1	1	1	2	3	2	1	3	1	1	2	2	2	4

† Has become sane, and is undergoing his sentence.

No. 5.—Return of the Number of Persons who were confined in Gaols as "*Dangerous Lunatics*," during the Two Years ending 31st March, 1861, and of the Number so confined who were removed to Asylums, discharged, or who died during the same period.

Gaol.	Remaining in Custody from previous year.			Committed during the year.			Total in Custody during the year.			Removed, Discharged, and Died.													Total Removed, Discharged, and Died.			Remaining in Gaol at close of year.		
										Removed to Asylum by Warrant of Lord Lieutenant.			Discharged, by Magistrates.			Otherwise Discharged.			Died.								
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Armagh,	7	1	8	10	8	18	17	9	26	5	2	7	9	4	13	–	–	–	–	1	1	14	7	21	3	2	5
Athy,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Belfast,	1	1	2	25	14	39	26	15	41	6	8	14	18	6	24	–	–	–	–	–	–	24	14	38	2	1	3
Carlow,	–	–	–	3	1	4	3	1	4	2	1	3	1	–	1	–	–	–	–	–	–	3	1	4	–	–	–
Carrick-on-Shannon,	–	–	–	6	–	6	6	–	6	5	–	5	1	–	1	–	–	–	–	–	–	6	–	6	–	–	–
Castlebar,	4	2	6	17	25	42	21	27	48	11	16	27	1	4	5	1	–	1	1	1	2	14	21	35	7	6	13
Cavan,	6	9	15	22	6	28	28	15	43	5	1	6	14	12	26	1	–	1	2	–	2	22	13	35	6	2	8
Clonmel,	4	5	9	11	10	21	15	15	30	–	4	4	4	4	8	–	–	–	1	1	2	5	9	14	10	6	16
Cork County,	1	–	1	11	16	27	12	16	28	11	13	24	1	2	3	–	–	–	–	–	–	12	15	27	–	1	1
Cork City,	–	–	–	1	–	1	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–
Downpatrick,	6	3	9	24	18	42	30	21	51	9	8	17	12	7	19	–	–	–	–	1	1	21	16	37	9	5	14
Drogheda,	–	1	1	3	4	7	3	5	8	1	1	2	2	2	4	–	–	–	–	–	–	3	3	6	–	2	2
Dundalk,	2	4	6	10	7	17	12	11	23	6	8	14	2	1	3	1	2	3	1	–	1	10	11	21	2	–	2
Ennis,	2	–	2	13	9	22	15	9	24	12	7	19	1	1	2	–	–	–	–	–	–	13	8	21	2	1	3
Enniskillen,	–	–	–	12	7	19	12	7	19	10	7	17	1	–	1	–	–	–	1	–	1	12	7	19	–	–	–
Galway County,	–	–	–	14	5	19	14	5	19	5	3	8	4	2	6	–	–	–	1	–	1	10	5	15	4	–	4
Galway Town,	1	–	1	8	2	10	9	2	11	5	1	6	3	1	4	–	–	–	–	–	–	8	2	10	1	–	1
Grangegorman,	–	47	47	–	70	70	–	117	117	–	20	20	–	34	34	–	–	–	–	6	6	–	60	60	–	57	57
Kilkenny County,	11	2	13	17	4	21	28	6	34	13	6	19	5	–	5	–	–	–	1	–	1	19	6	25	9	–	9
Kilkenny City,	1	–	1	–	–	–	1	–	1	1	–	1	–	–	–	–	–	–	–	–	–	1	–	1	–	–	–
Kilmainham,	1	4	5	13	13	26	14	17	31	10	6	16	–	1	1	1	–	1	–	1	1	11	8	19	3	9	12
Lifford,	4	3	7	26	18	44	30	21	51	7	3	10	9	11	20	–	–	–	–	–	–	16	14	30	14	7	21
Limerick County,	1	1	2	10	6	16	11	7	18	6	1	7	5	4	9	–	–	–	–	–	–	11	5	16	–	2	2
Londonderry,	2	2	4	10	3	13	12	5	17	3	2	5	7	3	10	–	–	–	–	–	–	10	5	15	2	–	2
Longford,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Maryborough,	–	–	–	9	6	15	9	6	15	6	5	11	1	–	1	–	–	–	–	1	1	7	6	13	2	–	2
Monaghan,	2	1	3	14	9	23	16	10	26	7	3	10	8	4	12	–	–	–	–	–	–	15	7	22	1	3	4
Mullingar,	–	–	–	7	1	8	7	1	8	6	1	7	1	–	1	–	–	–	–	–	–	7	1	8	–	–	–
Naas,	1	–	1	5	2	7	6	2	8	2	1	3	–	1	1	–	–	–	–	–	–	2	2	4	4	–	4
Nenagh,	16	4	20	20	9	29	36	13	49	2	6	8	15	4	19	–	–	–	5	1	6	22	11	33	14	2	16
Omagh,	–	–	–	1	–	1	1	–	1	–	–	–	1	–	1	–	–	–	–	–	–	1	–	1	–	–	–
Richmond B.,	13	–	13	49	–	49	62	–	62	20	–	20	17	–	17	–	–	–	2	–	2	39	–	39	23	–	23
Roscommon,	–	1	1	14	4	18	14	5	19	7	5	12	3	–	3	–	–	–	–	–	–	10	5	15	4	–	4
Sligo,	–	–	–	6	1	7	6	1	7	3	1	4	2	–	2	–	–	–	–	–	–	5	1	6	1	–	1
Tralee,	–	–	–	3	2	5	3	2	5	3	1	4	–	1	1	–	–	–	–	–	–	3	2	5	–	–	–
Trim,	–	–	–	7	5	12	7	5	12	7	5	12	–	–	–	–	–	–	–	–	–	7	5	12	–	–	–
Tullamore,	–	–	–	6	5	11	6	5	11	2	4	6	2	–	2	–	1	1	1	–	1	5	5	10	1	–	1
Waterford County,	–	–	–	–	1	1	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–
Waterford City,	–	–	–	8	–	8	8	–	8	8	–	8	–	–	–	–	–	–	–	–	–	8	–	8	–	–	–
Wexford,	18	2	20	14	6	20	32	8	40	2	5	7	3	–	3	3	1	4	1	–	1	9	6	15	23	2	25
Wicklow,	4	3	7	12	7	19	16	10	26	5	–	5	6	4	10	–	1	1	1	–	1	12	5	17	4	5	9
Total,	108	96	204	441	304	745	549	400	949	214	156	370	159	113	273	7	5	12	18	13	31	398	287	685	151	113	264
1861.																											
Armagh,	3	2	5	16	5	21	19	7	26	8	1	9	4	2	6	–	–	–	–	1	1	12	4	16	7	3	10
Athy,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Belfast,	2	1	3	14	8	22	16	9	25	6	6	12	9	1	10	–	–	–	–	–	–	15	7	22	1	2	3
Carlow,	–	–	–	3	–	3	3	–	3	2	–	2	–	–	–	–	–	–	–	–	–	2	–	2	1	–	1
Carrick-on-Shannon,	–	–	–	3	–	3	3	–	3	3	–	3	–	–	–	–	–	–	–	–	–	3	–	3	–	–	–
Castlebar,	7	6	13	17	26	43	24	32	56	9	11	20	11	9	20	–	–	–	1	2	3	21	22	43	3	10	13
Cavan,	6	2	8	15	7	22	21	9	30	6	1	7	7	2	9	–	–	–	1	2	3	14	5	19	7	4	11
Clonmel,	10	6	16	16	4	20	26	10	36	–	3	3	5	2	7	–	–	–	3	–	3	8	5	13	18	5	23
Cork County,	–	1	1	21	11	32	21	12	33	20	12	32	1	–	1	–	–	–	–	–	–	21	12	33	–	–	–
Cork City,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Downpatrick,	9	5	14	24	13	37	33	18	51	10	1	11	9	8	17	–	–	–	1	–	1	20	9	29	13	9	22
Drogheda,	–	2	2	4	1	5	4	3	7	–	2	2	3	1	4	–	–	–	–	–	–	3	3	6	1	–	1
Dundalk,	2	–	2	9	5	14	11	5	16	7	2	9	–	2	2	–	1	1	–	–	–	7	5	12	4	–	4
Ennis,	2	1	3	7	2	9	9	3	12	6	2	8	1	–	1	–	–	–	–	–	–	7	2	9	2	1	3
Enniskillen,	–	–	–	7	4	11	7	4	11	6	3	9	1	–	1	–	–	–	–	1	1	7	4	11	–	–	–
Galway County,	4	–	4	18	7	25	22	7	29	8	–	8	8	3	11	2	–	2	1	–	1	19	3	22	3	4	7
Galway Town,	1	–	1	3	–	3	4	–	4	1	–	1	1	–	1	–	–	–	–	–	–	2	–	2	2	–	2
Grangegorman,	–	57	57	–	28	28	–	85	85	–	15	15	–	30	30	–	–	–	–	3	3	–	48	48	–	37	37
Kilkenny County,	9	–	9	7	11	18	16	11	27	13	11	24	3	–	3	–	–	–	–	–	–	16	11	27	–	–	–
Kilkenny City,	–	–	–	–	1	1	–	1	1	–	1	1	–	–	–	–	–	–	–	1	1	–	1	1	–	–	–
Kilmainham,	3	9	12	17	10	27	20	19	39	9	10	19	5	5	10	–	–	–	–	1	1	14	16	30	6	3	9
Lifford,	14	7	21	31	12	43	45	19	64	4	12	16	22	1	23	–	–	–	–	–	–	26	13	39	19	6	25
Limerick County,	–	2	2	7	11	18	7	13	20	4	9	13	2	1	3	–	–	–	–	1	1	6	11	17	1	2	3
Limerick City,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Londonderry,	2	–	2	15	3	18	17	3	20	3	2	5	7	–	7	–	–	–	–	–	–	10	2	12	7	1	8
Longford,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Maryborough,	2	–	2	5	2	7	7	2	9	3	2	5	2	–	2	–	–	–	1	–	1	6	2	8	1	–	1
Monaghan,	1	3	4	6	8	14	7	11	18	1	2	3	3	2	5	–	–	–	–	1	1	4	5	9	3	6	9
Mullingar,	–	–	–	5	3	8	5	3	8	5	3	8	–	–	–	–	–	–	–	–	–	5	3	8	–	–	–
Naas,	4	–	4	4	6	10	8	6	14	1	3	4	1	–	1	–	–	–	1	1	2	3	4	7	5	2	7
Nenagh,	14	2	16	14	6	20	28	8	36	–	3	3	13	2	15	–	–	–	1	–	1	14	5	19	14	3	17
Omagh,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Richmond B.,	23	–	23	33	–	33	56	–	56	18	–	18	17	–	17	–	–	–	2	–	2	37	–	37	19	–	19
Roscommon,	4	–	4	15	5	20	19	5	24	6	3	9	9	1	10	1	–	1	2	–	2	18	4	22	1	1	2
Sligo,	1	–	1	3	1	4	4	1	5	3	–	3	–	–	–	1	1	2	–	–	–	4	1	5	–	–	–
Tralee,	–	–	–	8	3	11	8	3	11	6	3	9	2	–	2	–	–	–	–	–	–	8	3	11	–	–	–
Trim,	–	–	–	7	4	11	7	4	11	7	3	10	–	1	1	–	–	–	–	–	–	7	4	11	–	–	–
Tullamore,	1	–	1	8	5	13	9	5	14	6	5	11	1	–	1	–	–	–	–	–	–	7	5	12	2	–	2
Waterford County,	–	–	–	1	1	2	1	1	2	1	1	2	–	–	–	–	–	–	–	–	–	1	1	2	–	–	–
Waterford City,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Wexford,	23	2	25	19	5	24	42	7	49	5	3	8	5	–	5	1	2	3	1	1	2	12	6	18	30	1	31
Wicklow,	4	5	9	9	11	20	13	16	29	5	4	9	5	6	11	–	–	–	–	–	–	10	10	20	3	6	9
Total,	151	113	264	391	229	620	542	342	884	192	139	331	157	79	236	5	4	9	15	14	29	369	236	605	173	106	279

No. 6.—Return of Persons committed to Gaols under the Vagrancy Act, during the Two Years ending 31st March, 1860 and 1861, who were Insane on committal, or who became Insane subsequent thereto.

Gaol.	Total.			Insane on Committal.			Became Insane subsequent to Committal.			Discharged.			Removed to Asylum by Warrant of Lord Lieutenant.			Died.			Remaining in Gaol.		
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Cork County, . .	–	1	1	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–
Total, . .	–	1	1	–	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	–	–
1861.																					
Cork County, . .	1	2	3	1	2	3	–	–	–	–	–	–	1	2	3	–	–	–	–	–	–
Total, . .	1	2	3	1	2	3	–	–	–	–	–	–	1	2	3	–	–	–	–	–	–

No. 7.—Summary of the foregoing Tables, for the Two Years ending 31st March, 1860 and 1861.

——	Remaining in Custody from previous year.			Committed during year.			Total Number in Custody.			Removed to Asylum by Warrant of Lord Lieutenant.			Discharged by order of Magistrates on Medical Certificates, Cured.			Otherwise discharged from Gaol.			Died.			Total Removed, Discharged, and Died.			Remaining in Gaol on 31st March.		
1860.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Persons acquitted of offences on the ground of insanity, . .	–	–	–	–	–	–	8	3	11	2	2	4	–	–	–	2	–	2	–	–	–	4	2	6	4	1	5
Persons found insane on arraignment, and incapable of pleading, .	–	–	–	–	–	–	14	2	16	5	1	6	–	–	–	2	–	2	–	–	–	7	1	8	7	1	8
Persons under sentence of imprisonment or transportation, who became insane in gaol,	–	–	–	–	–	–	3	1	4	2	–	2	–	–	–	–	–	–	–	–	–	2	–	2	1	1	2
Persons committed in default of surety to keep the peace, who were insane on, or who became insane subsequent to committal, .	–	–	–	–	–	–	5	3	8	5	3	8	–	–	–	–	–	–	–	–	–	5	3	8	–	–	–
Persons committed under the Vagrancy Act, who were insane on, or who became insane subsequent to committal, ...	–	–	–	–	–	–	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–
Persons committed as dangerous lunatics, .	108	96	204	441	304	745	549	400	949	214	156	370	159	113	272	7	5	12	18	13	31	398	287	685	151	113	264
Total, . .	108	96	204	441	304	745	549	400	949	228	163	391	159	113	272	11	5	16	18	13	31	416	294	710	163	116	279
1861.																											
Persons acquitted of offences on the ground of insanity, . .	–	–	–	–	–	–	11	1	15	9	1	10	–	–	–	–	–	–	–	–	–	9	1	10	5	–	5
Persons found insane on arraignment, and incapable of pleading, .	–	–	–	–	–	–	13	4	17	6	1	7	–	–	–	3	1	4	–	1	1	9	3	12	4	1	5
Persons under sentence of imprisonment or transportation, who became insane in gaol,	–	–	–	–	–	–	5	4	9	2	1	3	–	–	–	1	1	2	–	–	–	3	2	5	2	2	4
Persons committed in default of surety to keep the peace, who were insane on, or who became insane subsequent to committal, .	–	–	–	–	–	–	4	5	9	4	4	8	–	–	–	–	1	1	–	–	–	4	5	9	–	–	–
Persons committed under the Vagrancy Act, who were insane on, or who became insane subsequent to committal, ...	–	–	–	–	–	–	1	2	3	1	2	3	–	–	–	–	–	–	–	–	–	1	2	3	–	–	–
Persons committed as dangerous lunatics, .	151	113	264	301	229	530	542	342	884	192	139	331	157	79	236	5	4	9	15	14	29	369	236	605	173	106	279
Total, . .	151	113	264	301	229	530	579	358	937	214	148	362	157	79	236	9	7	16	15	15	30	395	249	644	184	109	293

No. 8.—Return of all Persons under Sentence of Penal Servitude or Transportation in Government Prisons, who were certified as Insane in Prison during the two Years ended 31st March, 1860 and 1861.

Nature of Offence.	1860.				1861.				Remarks.
	Mountjoy. (Males.)	Spike Island. (Males.)	Philipstown. (Males.)	Mountjoy. (Females.)	Mountjoy. (Males.)	Spike Island. (Males.)	Philipstown. (Males.)	Mountjoy. (Females.)	
Burglary,	–	–	–	–	2*	–	–	–	* One of these convicts was received from Gibraltar in a state of insanity.
Burglary and Robbery,	1	–	1	–	–	–	1	–	
Highway Robbery,	–	1	1	–	–	–	–	–	
Assault and Robbery,	–	–	1†	–	–	–	–	–	† This convict showed symptoms of dangerous eccentricity before reception into the Government Prisons.
Cow Stealing,	–	–	1‡	–	–	–	–	–	‡ This convict was received from Bermuda in a state of insanity.
Sheep Stealing,	–	–	1	–	–	–	–	–	
Killing Sheep,	–	–	–	–	–	–	–	1	
Rape,	–	–	–	–	–	–	1	–	
Arson,	–	–	–	1	–	–	–	–	
Felony,	–	–	1	3	–	–	1	1	
Larceny,	–	–	–	2	–	–	–	2§	§ One of these convicts was formerly in a lunatic asylum.
Total,	1	1	6	6	2	–	3	4	
Removed to the Central Asylum at Dundrum, by Warrant of the Lord Lieutenant,	1	1	5	6	1	–	3	4	
Removed to District Asylums,	–	–	1	–	1	–	–	–	
Total,	1	1	6	6	2	–	3	4	

APPENDIX D.

Central Criminal Lunatic Asylum, Dundrum.

Admissions, Discharges, and Deaths, &c., during the two Years ending 31st March, 1860 and 1861.

	1860.			1861.		
	Male.	Female.	Total.	Male.	Female.	Total.
In Asylum on 31st March,	89	41	130	90	40	130
Admitted during the Year,	8	8	16	10	4	14
Total,	97	49	146	100	44	144
Discharged during the Year:						
Recovered,	4	3	7	3	2	5
Unimproved,	1	4	5	–	–	–
Total Discharged,	5	7	12	3	2	5
Deaths:						
Natural Causes,	2	2	4	5	1	6
Total Discharges, Deaths, and Escapes during the Year,	7	9	16	8	3	11
Remaining in Asylum at close of Year,	90	40	130	92	41	133

Note.—Of the male patients recovered in 1860, one was discharged by order of his Excellency the Lord Lieutenant, one on expiration of his sentence, and two were sent back to the Convict Prison from whence they came. The three females recovered were discharged on the expiration of their sentences. The unimproved were transferred, on the expiration of their sentences, to their respective District Asylums.

In 1861 three males were discharged on expiration of their sentences, one female was sent back to Convict Prison, and one discharged by order of his Excellency the Lord Lieutenant.

Classification of Patients in Asylum on 31st March, 1861.

Classification.	Male.	Female.	Total
Convalescent,	11	4	15
Quiet and Orderly, but Insane,	25	12	37
Moderately tranquil,	29	7	36
Noisy and Refractory,	27	18	45
Total,	92	41	133
Imbecile and Epileptic,	5	1	6
Suicidal,	4	6	10

Form of Disease in those remaining in Asylum on 31st March, 1861.

Form of Disease.	Male.	Female.	Total.
Mania, Acute,	11	8	19
„ Chronic,	16	4	20
„ Recurrent,	4	6	10
„ „ with Epilepsy,	5	1	6
Melancholia,	18	5	23
Monomania,	1	–	1
Moral Insanity,	2	3	5
Dementia,	6	–	6
Imbecility and Idiocy,	18	10	28
	81	37	118
Sane,	11	4	15
Total,	92	41	133

Causes of Death during the two Years ending 31st March, 1860 and 1861.

Cause of Death.	1860.			1861.		
	Male.	Female.	Total.	Male.	Female.	Total.
Exhaustion, Natural Decay,	1	–	1	1	–	1
Phthisis,	1	1	2	2	1	3
Apoplexy,	–	1	1	–	–	–
General Venous Congestion and Disease of Kidneys,	–	–	–	1	–	1
Pneumonia,	–	–	–	1	–	1
Total,	2	2	4	5	1	6

State as to probability of recovery of those in Asylum on 31st March, 1861.

	Male.	Female.	Total.
Lunatics probably Curable,	15	10	25
„ „ Incurable,	43	16	59
Imbeciles and Idiots,	18	10	28
Epileptics,	5	1	6
Sane,	11	4	15
Total,	92	41	133

Receipts and Expenditure for the Two Years ending 31st March, 1860 and 1861.

Receipts.	Amount. 1860. £	s.	d.	1861. £	s.	d.
Balance on hand, 31st March, 1859,	396	1	1	193	9	5
Treasury Advances,	3,093	2	8	3,624	1	1
Received for Sale of Farm Produce not required for use of the Asylum,	97	4	0	99	9	8½
Amount of Casual Receipts,	14	2	11	16	9	0
Total Receipts,	3,600	10	8	3,933	9	2½

Expenditure.	Amount. 1860. £	s.	d.	1861. £	s.	d.
Provisions, including Groceries,	1,190	0	3½	1,236	6	11½
Clothing of Patients,	226	3	4½	160	12	8
,, Servants,	61	7	3½	57	17	1½
Fuel and Light,	273	2	7⅓	*43	18	2
Washing,	50	2	5	54	9	3
Salaries of Officers,	741	2	6½	737	18	4
Wages of Servants,	368	10	0	367	11	11
Bedding and Furniture,	3	11	0	—		
Repairs and Alterations,	48	15	1½	38	4	10½
Farm and Garden,	220	14	3½	215	3	4½
Medical Comforts, Groceries,	25	10	0	26	0	0
Medicines,	20	5	6	21	13	6
Wine, Porter, and Spirits,	28	12	3	42	4	6
Medical Diet,	57	0	0	58	0	0
Tobacco and Snuff,	30	2	10	30	3	6
Incidental Expenses,	62	1	8½	61	12	4½
Total Outlay,	3,407	1	3	3,151	16	6½
Balance on hand, 31st March, 1860,	193	9	5	781	12	8
	3,600	10	8	3,933	9	2½
Daily average No. of Patients,	132			133		
Average Cost of each Patient per head per annum, on the entire outlay,	£ 25	s. 16	d. 2½	£ 23	s. 13	d. 11½

* The Commissioners of Public Works commenced supplying the Asylum with Fuel on the 1st April, 1860, there is no charge, therefore, made under his head; the average cost of each patient is, consequently, lower than in former years, but if the price of Fuel be added, the average cost of each patient per head, per annum, will be £25 7*s.* 10½*d.*

APPENDIX E.

Private Licensed Houses.

Return of Admissions, Discharges, and Deaths, during the Two Years ending 31st March, 1860 and 1861.

Name of Asylum.	Number remaining from previous Year. M.	F.	T.	Admitted during the year. M.	F.	T.	Total under treatment during the year. M.	F.	T.	Discharged. Recovered. M.	F.	T.	Improved. M.	F.	T.	Not Cured, or Incurable. M.	F.	T.	Died. M.	F.	T.	Total Discharged and Died. M.	F.	T.	Remaining on 31st March. M.	F.	T.
1860.																											
Armagh Retreat,	16	14	30	8	5	13	24	19	43	5	2	7	–	2	2	–	–	–	2	1	3	7	5	12	17	14	31
Bellevue, County Dublin,	20	8	28	5	–	5	25	8	33	2	–	2	1	–	1	–	1	1	1	–	1	4	1	5	21	7	28
Benvue, do.,	1	1	2	–	–	–	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	2
Bloomfield Retreat, do.,	8	14	22	2	6	8	10	20	30	1	1	2	–	2	2	–	–	–	1	–	1	2	3	5	8	17	25
Bushy Park, County Limerick,	2	4	6	1	3	4	3	7	10	–	–	–	–	1	1	–	–	–	–	–	–	–	1	1	3	6	9
Cittadella, County Cork,	15	6	21	4	4	8	19	10	29	3	1	4	1	2	3	–	–	–	2	1	3	6	4	10	13	6	19
Course Lodge, Armagh,	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Eagle Lodge, County Dublin,	9	10	19	7	10	17	16	20	36	–	1	1	4	2	6	1	1	2	1	1	2	6	5	11	10	15	25
Farnham House, do.,	26	15	41	12	2	14	38	17	55	6	2	8	3	2	5	2	1	3	2	–	2	13	5	18	25	12	37
Hampstead House, do.,	18	8	26	12	6	18	30	14	44	3	2	5	1	–	1	1	–	1	–	1	1	5	3	8	25	11	36
Hartfield House, do.,	25	4	29	22	–	22	47	4	51	7	–	7	7	–	7	6	–	6	2	–	2	22	–	22	25	4	29
Lindville, County Cork,	17	14	31	8	10	18	25	24	49	2	3	5	1	1	2	–	2	2	1	–	1	4	6	10	21	18	39
Lyle House, County Dublin,	–	8	8	–	3	3	–	11	11	–	–	–	–	–	–	–	–	–	–	1	1	–	1	1	–	10	10
Lucan Spa, do.,	2	3	5	1	6	7	3	9	12	–	2	2	1	–	1	–	1	1	–	–	–	1	3	4	2	6	8
Midland Retreat, Queen's County,	13	6	19	2	1	3	15	7	22	1	–	1	2	–	2	–	–	–	–	–	–	3	–	3	12	7	19
Orchardstown, County Dublin,	3	5	8	5	–	5	8	5	13	1	1	2	1	–	1	2	–	2	–	–	–	4	1	5	4	4	8
Riversdale Lodge, do.,	–	1	1	–	1	1	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2	2
St. Vincent's, do.,	–	11	11	–	3	3	–	14	14	–	2	2	–	1	1	–	1	1	–	–	–	–	4	4	–	10	10
St. Patrick's, Dublin,	76	71	147	4	6	10	80	77	157	4	3	7	1	1	2	–	–	–	3	5	8	8	9	17	72	68	140
Verville, County Dublin,	–	17	17	–	6	6	–	23	23	–	1	1	–	1	1	–	–	–	–	–	–	–	2	2	–	21	21
Total,	251	220	471	93	72	165	344	292	636	35	21	56	23	15	38	12	7	19	15	10	25	85	53	138	259	239	498
1861.																											
Armagh Retreat,	17	14	31	8	9	17	25	23	48	5	2	7	1	2	3	2	–	2	1	2	3	9	6	15	16	17	33
Bellevue,	21	7	28	3	1	4	24	8	32	–	–	–	1	–	1	3	–	3	2	1	3	6	1	7	18	7	25
Benvue,	1	1	2	–	–	–	1	1	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	2
Bloomfield Retreat,	8	17	25	2	9	11	10	26	36	–	4	4	1	1	2	1	–	1	–	–	–	2	5	7	8	21	29
Bushy Park,	3	6	9	2	2	4	5	8	13	–	1	1	1	1	2	–	1	1	1	–	1	2	3	5	3	5	8
Cittadella,	13	6	19	3	7	10	16	13	29	2	3	5	–	1	1	–	–	–	–	1	1	2	5	7	14	8	22
Course Lodge,	–	–	–	–	2	2	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Eagle Lodge,	10	15	25	5	3	8	15	18	33	–	–	–	–	5	5	3	2	5	1	1	2	4	8	12	11	10	21
Farnham House,	25	12	37	13	6	19	38	18	56	5	4	9	–	–	–	3	3	6	3	–	3	11	7	18	27	11	38
Hampstead House,	25	11	36	8	5	13	33	16	49	2	2	4	3	–	3	1	1	2	1	–	1	7	3	10	26	13	39
Hartfield House,	25	4	29	15	–	15	40	4	44	4	–	4	5	–	5	6	–	6	1	–	1	16	–	16	24	4	28
Lindville,	21	18	39	8	7	15	29	25	54	1	5	6	1	2	3	3	4	7	4	1	5	9	12	21	20	13	33
Lyle House,	–	10	10	–	2	2	–	12	12	–	2	2	–	1	1	–	2	2	–	1	1	–	6	6	–	6	6
Lucan Spa,	2	6	8	3	5	8	5	11	16	–	1	1	–	–	–	1	1	2	–	1	1	–	3	3	5	8	13
Midland Retreat,	12	7	19	5	2	7	17	9	26	–	–	–	4	–	4	–	–	–	2	–	2	6	–	6	11	9	20
Orchardstown,	4	4	8	4	5	9	8	9	17	–	2	2	–	–	–	1	–	1	3	–	3	4	2	6	4	7	11
Riversdale Lodge,	–	2	2	–	3	3	–	5	5	–	3	3	–	–	–	–	–	–	–	–	–	–	3	3	–	2	2
St. Vincent's,	–	10	10	–	4	4	–	14	14	–	2	2	–	1	1	–	–	–	–	–	–	–	3	3	–	11	11
St. Patrick's,	72	68	140	15	9	24	87	77	164	4	1	5	2	4	6	1	–	1	5	2	7	12	7	19	75	70	145
Verville,	–	21	21	–	10	10	–	31	31	–	4	4	–	2	2	–	2	2	–	–	–	–	8	8	–	23	23
Total,	259	239	498	94	91	185	353	330	683	23	36	59	19	20	39	24	16	40	24	10	34	90	82	172	263	246	509

APPENDIX F.

Order in Council Appointing Commissioners for Control, &c., of Lunatic Asylums.

By the Lord Lieutenant and Council of Ireland.

Carlisle.

Whereas by an Act made and passed in a Session of Parliament holden in the Fifty-seventh year of His late Majesty King George the Third, intituled "An Act to Provide for the Establishment of Asylums for the Lunatic Poor in Ireland," it was, amongst other things, enacted, that it should and might be lawful for the Lord Lieutenant, or other Chief Governor or Governors of Ireland, by and with the advice of His Majesty's Privy Council in Ireland, to nominate and appoint any persons, not exceeding Eight in number, to be Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of all such Asylums.

And whereas by another Act made and passed in the Session of Parliament holden in the First and Second year of His late Majesty King George the Fourth, intituled "An Act to make more Effectual Provision for the Establishment of Asylums for the Lunatic Poor, and for the Custody of Insane Persons charged with Offences in Ireland," the said recited Act of the Fifty-seventh year of His late Majesty King George the Third, was, together with an Act passed in the First year of His late Majesty King George the Fourth, intituled "An Act to amend an Act of the Fifty-seventh year of His late Majesty for the Establishment of Asylums for the Lunatic Poor in Ireland," repealed, save as to matters done under those Acts; and it was amongst other things enacted, that it should and might be lawful for the Lord Lieutenant, or other Chief Governor or Governors of Ireland, by and with the advice of His Majesty's Privy Council in Ireland, to nominate and appoint any persons, not exceeding Eight in number, to be Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of all such Asylums.

And whereas an Act was passed in the Eighteenth and Nineteenth year of the Reign of Her present Majesty, Chapter 109, to be cited for all purposes as "The Lunatic Asylums' Repayment of Advances (Ireland) Act, 1855," and it is thereby, amongst other things, enacted, that from and after the passing of the said Act, it shall and may be lawful for the Lord Lieutenant in Council to revoke any appointment heretofore made, or purporting to have been made, under the said recited Act of the First and Second George the Fourth, as the Lord Lieutenant in Council may think fit, and to appoint, from time to time, as vacancies may occur, any other persons (of whom the Chairman of the Commissioners of Public Works for the time being shall be one) to be Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of Asylums for the Lunatic Poor in Ireland; and it is thereby further provided, that all Lands and Hereditaments, and Property of what nature or kind whatsoever, which may have been acquired by, or vested in the said Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of Asylums for the Lunatic Poor, or any of them, appointed, or purporting to have been appointed under the said recited Act of the First and Second Years of His late Majesty King George the Fourth, should be, and are thereby to all intents and purposes vested in the Commissioners for the time being appointed, and to be appointed, under the said last recited Act.

And whereas under the provisions of the said first recited Act, the following Gentlemen were appointed to be Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of Asylums for the Lunatic Poor in Ireland, viz.:—

1. William Harvey, Esquire, M.D., Physician-General.
2. George Renny, Esquire, M.D., Director-General of Military Hospitals.
3. Philip Crampton, Esquire, M.D., Surgeon-General.
4. Robert Percival, Esquire, M.D.
5. John Leslie Foster, Esquire.
6. John David La Touche, Esquire.
7. Peter La Touche, junior, Esquire.
8. William Disney, Esquire.

And in succession to these Gentlemen, from time to time:—

Benjamin Blake Woodward, Esquire.
John Cheyne, Esquire, M.D., Physician-General.
David Charles La Touche, Esquire.
Colonel John Fox Burgoyne.
Brooke Taylor Ottley, Esquire.
John Radcliffe, Esquire.
Lieutenant-Colonel Harry David Jones.
Richard Griffith, Esquire.
William T. Mulvany, Esquire.
Thomas A. Larcom, Esquire.

And whereas under the provisions of the last recited Act of Parliament it has seemed fit to Us, the Lord Lieutenant in Council, to revoke any appointment heretofore made or purporting to have been made, save as to matters done, and to appoint the Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of Asylums for the Lunatic Poor in Ireland, as hereinafter mentioned.

Now We, the Lord Lieutenant, by and with the advice of Her Majesty's Privy Council in Ireland, in pursuance of the powers so vested in Us, do hereby revoke, save as to matters done, any appointment heretofore made, or purporting to have been made, of Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of Asylums for the Lunatic Poor in Ireland. And We do hereby appoint

Sir Richard Griffith, Bart., Chairman of the Commissioners of Public Works in Ireland;

John Nugent, Esq., M.D., Inspector of Lunatic Asylums;

John Graham M'Kerlie, Esq., Lieutenant-Colonel Royal Engineers, Commissioner of Public Works in Ireland; and

George William Hatchell, Esq., M.D., Inspector of Lunatic Asylums, to be Commissioners for General Control and Correspondence, and for the Superintending and Directing the Erection, Establishment, and Regulation of Asylums for the Lunatic Poor in Ireland.

Given at the Council Chamber in Dublin, the 28th day of March, 1860.

Maziere Brady, *C.* Fred. Shaw. N. Ball.
Richd. W. Greene. John Hatchell.
William Keogh.

ORDERS in COUNCIL for the Creation and Alteration of New Districts, &c.

I.

By the LORD LIEUTENANT and COUNCIL of IRELAND.

CARLISLE.

Whereas by an Act passed in the 7th Year of His late Majesty King George the Fourth, cap. 14, intituled "An Act for the further Amendment of an Act of the 1st and 2nd Years of His present Majesty, for the Establishment of Asylums for the Lunatic Poor in Ireland," it was enacted, that from and after the passing of the said Act, it should and might be lawful for the Lord Lieutenant, or other Chief Governor or Governors of Ireland, by and with the advice of His Majesty's Privy Council in Ireland, from time to time, and at all times whenever, and so often as it should seem expedient to him or them so to do, to direct and order that any Asylum or Asylums for the Lunatic Poor in Ireland, should be erected and established in any place in and for any District in Ireland, in lieu of or in addition to any Asylum or Asylums erected under the authority of the said Act of the 1st and 2nd Years of the Reign of King George the Fourth, and from time to time to alter and change the District or Place in or for which any such Asylum or Asylums should have been or should be erected under the authority of the said Act:

And whereas in pursuance of the powers in them vested for that purpose, the Lords Justices, by and with the advice and consent of the Privy Council in Ireland, did by Order bearing date the 29th day of June, 1847, Order and Direct that the Counties of Carlow, Kildare, and Wexford be a District for the purposes mentioned in the said Acts, to be called the District of the Carlow Lunatic Asylum:

And whereas it is now deemed expedient that an Asylum for Lunatic Poor should be erected in or near Enniscorthy, in the County of Wexford, for a District to consist of the County of Wexford only; and that for that purpose the said County of Wexford should be severed and separated from the said Carlow District:

We, the Lord Lieutenant, by and with the advice and consent of Her Majesty's Privy Council in Ireland, do hereby Order and Direct, in pursuance of the powers vested in Us, by the said Acts or otherwise, that the Counties of Carlow and Kildare shall be a District for the purposes of the said Act, to be called the District of the Carlow Lunatic Asylum. And We do further Order and Direct, with the advice and consent aforesaid, that the County of Wexford shall be severed and separated from the said Carlow District.

And We hereby further Order and Direct, by and with the advice and consent aforesaid, and in pursuance of the powers aforesaid, that the said County of Wexford shall, for the purposes mentioned in the said Acts, be a District, to be called the District of the Wexford Lunatic Asylum; and that there be erected in or near Enniscorthy, in the County of Wexford, in and for the said District, an Asylum sufficient to contain and accommodate Two Hundred and Fifty Lunatic Poor.

Given at the Council Chamber in Dublin, the 4th day of February, 1860.

MAZIERE BRADY, *C.* FRED. SHAW.

II.

By the LORD LIEUTENANT and COUNCIL of IRELAND.

CARLISLE.

Whereas by an Act passed in the 7th Year of His late Majesty King George the Fourth, cap. 14, intituled "An Act for the further Amendment of an Act of the 1st and 2nd Years of His present Majesty for the Establishment of Asylums for the Lunatic Poor in Ireland," it was enacted that from and after the passing of the said Act, it should and might be lawful for the Lord Lieutenant, by and with the advice of His Majesty's Privy Council in Ireland, from time to time, and at all times whenever, and so often as it should seem expedient to him or them so to do, to direct and order that any Asylum or Asylums for the Lunatic Poor in Ireland should be erected and established in any place, in and for any District in Ireland, in lieu of, or in addition to any Asylum or Asylums erected under the authority of the said Act of the 1st and 2nd Years of the Reign of His Majesty King George the Fourth, and from time to time to alter and change the District or Place in or for which any such Asylum or Asylums should have been or should be erected under the authority of the said Act:

And whereas in pursuance of the powers given by the said Acts respectively, the Lord Lieutenant, by and with the advice and consent of the Privy Council in Ireland, did, by Order bearing date the 30th day of December, 1846, Order and Direct that the Counties of Clare and Limerick, and the City and County of the City of Limerick, be a District for the purposes mentioned in the said Acts, to be called the District of the Limerick Lunatic Asylum:

And whereas it is now deemed expedient that an Asylum for Lunatic Poor should be erected in or near Ennis, in the County of Clare, for a District, to consist of the County of Clare only, and that, for that purpose, the said County of Clare should be severed and separated from the said Limerick District:

We, the Lord Lieutenant, by and with the advice and consent of Her Majesty's Privy Council in Ireland, do hereby Order and Direct, in pursuance of the powers vested in Us by the said Acts, or otherwise, that the said County of Clare shall be severed and separated from the said Limerick District, and that the said County of Limerick, and the City and County of the City of Limerick, shall be a District for the purposes mentioned in the said Acts, to be called the District of the Limerick Lunatic Asylum:

And We do hereby Order and Direct, by and with the advice and consent aforesaid, and in pursuance of the powers aforesaid, that the County of Clare shall, for the purposes mentioned in the said Acts, be a District, to be called the District of the Clare Lunatic Asylum, and that there be erected in or near Ennis, in said County of Clare, in and for said District of Clare, an Asylum sufficient to contain and accommodate Two Hundred and Sixty Lunatic Poor.

Given at the Council Chamber in Dublin, the 4th day of February, 1860.

MAZIERE BRADY, *C.* FRED. SHAW.

III.

By the LORD LIEUTENANT and COUNCIL of IRELAND.

CARLISLE.

Whereas by an Act passed in the 7th Year of His late Majesty King George the Fourth, cap. 14, intituled "An Act for the further Amendment of an Act of the 1st and 2nd Years of His present Majesty for the Establishment of Asylums for the Lunatic Poor in Ireland," it was enacted that from and after the passing of the said Act, it should and might be lawful for the Lord Lieutenant, or other Chief Governor or Governors of Ireland, by and with the advice of His Majesty's Privy Council in Ireland, from time to time, and at all times whenever and so often as it should seem expedient to him or them so to do, to direct and order that any Asylum or Asylums for the Lunatic Poor in Ireland should be erected and established in any place, in and for any District in Ireland, in lieu of and in addition to any Asylum or Asylums erected under the authority of the said Act of the 1st and 2nd Years of the Reign of His present Majesty, and from time to time to alter and change the District or Place in and for which any such Asylum or Asylums should have been or should be erected under the authority of the said Act:

And whereas in pursuance of the powers for that purpose, the Lord Lieutenant, by and with the advice and consent of the Privy Council in Ireland, did, by Order bearing date the 11th day of August, 1826, Order and Direct that the Counties of Tyrone and Donegal be severed and separated from the District of the Armagh Asylum; and that the Counties of Tyrone, Donegal, and Londonderry, and the County of the City of Londonderry, be the District of the Londonderry Asylum; and that there should be erected and established for the said District an Asylum for Lunatic Poor, sufficient for the accommodation of One Hundred such Lunatic Poor:

And whereas by a further Order of the Lord Lieutenant in Council, as aforesaid, and bearing date the 13th day of September, 1847, after reciting that it was expedient that an Asylum for Lunatic Poor should be erected in or near Omagh, for a new District, to consist of the County of Tyrone (to be severed from the District of the Londonderry Lunatic Asylum), and the County of Fermanagh (to be severed from the District of the Armagh Lunatic Asylum), it was Ordered, that there be erected in or near Omagh, in and for said New District, an Asylum in said Order mentioned:

And whereas it is now deemed expedient that an Asylum for Lunatic Poor should be erected in or near Letterkenny, in the County of Donegal, for a District to consist of the County of Donegal only, and that for that purpose the said County of Donegal should be severed and separated from the said Londonderry District:

We, the Lord Lieutenant, by and with the advice and consent of Her Majesty's Privy Council in Ireland, do hereby Order and Direct, in pursuance of the powers vested in Us by the said Acts, or otherwise, that the said County of Donegal shall be severed and separated from the said Londonderry District, and that the said County of Donegal shall be a District for the purposes mentioned in the said Acts, to be called the District of the Donegal Lunatic Asylum:

And We hereby further Order and Direct, by and with the advice and consent aforesaid, and in pursuance of the powers aforesaid, that there be erected, in or near Letterkenny, in said County of Donegal, in and for the said District of Donegal, an Asylum sufficient to contain and accommodate Three Hundred Lunatic Poor.

And We do hereby further Order and Direct, by and with the advice and consent aforesaid, and in pursuance of the powers vested in Us by the said Acts, that the City of Londonderry and the County of Londonderry shall be a District for the purposes of said Acts, to be called the District of the Londonderry Lunatic Asylum.

Given at the Council Chamber in Dublin, the 4th day of February, 1860.

Maziere Brady, *C.* Fred. Shaw.

IV.

By the Lord Lieutenant and Council of Ireland.

Carlisle.

Whereas by an Act passed in the 7th year of His late Majesty King George the Fourth, Chapter 14, intituled "An Act for the further Amendment of an Act of the 1st and 2nd years of His present Majesty, for the Establishment of Asylums for the Lunatic Poor in Ireland," it was enacted, that from and after the passing of the said Act, it should and might be lawful for the Lord Lieutenant or other Chief Governor or Governors of Ireland, by and with the advice of His Majesty's Privy Council in Ireland, from time to time and at all times, whenever and so often as it should seem expedient to him or them so to do, to order and direct that any Asylum or Asylums for the Lunatic Poor in Ireland should be erected and established in any place, in and for any District in Ireland, in lieu of, and in addition to any Asylum or Asylums erected under the authority of the said Act of the 1st and 2nd years of the Reign of His present Majesty, and from time to time to alter and change the District or Places in and for which any such Asylum or Asylums should have been or should be erected under the authority of the said Act.

And whereas in pursuance of the powers given by the said Acts respectively, the Lord Lieutenant, by and with the advice and consent of the Privy Council in Ireland, did, by Order, bearing date the 11th day of August, 1826, order and direct that the District of the Armagh Lunatic Asylum should consist of the Counties of Armagh, Monaghan, Fermanagh, and Cavan.

And whereas, under and by virtue of a further Order in Council as aforesaid, bearing date the 13th day of September, 1847, the said County of Fermanagh was severed from the said Armagh District, which thereupon consisted of the said Counties of Armagh, Monaghan, and Cavan. And whereas it is now deemed expedient that an Asylum for Lunatic Poor should be erected and established in or near the Town of Monaghan, for a District, to consist of the County of Monaghan only; and that for that purpose the said County of Monaghan should be severed and separated from the said Armagh District.

Now We, the Lord Lieutenant, by and with the advice and consent of Her Majesty's Privy Council in Ireland, do, in pursuance of the powers vested in Us, by the said Acts or otherwise, hereby order and direct that there be erected and established in or near the Town of Monaghan, in the County of Monaghan, in and for the said proposed New District of Monaghan, an Asylum sufficient to contain and accommodate One Hundred and Sixty Lunatic Poor, such Asylum to be called the Monaghan District Lunatic Asylum.

And, upon said Asylum being erected, such further Order will be made as to Us shall seem meet.

Given at the Council Chamber in Dublin, the 19th day of March, 1861.

Rd. Dublin. Maziere Brady, *C.*
F. Blackburne. Fred. Shaw. T. B. C. Smith.
John Hatchell. J. D. Fitzgerald.

V.

By the Lord Lieutenant and Council of Ireland.

Carlisle.

Whereas by an Act passed in the 7th year of His late Majesty King George the Fourth, Chapter 14, intituled "An Act for the further amendment of an Act of the 1st and 2nd years of His present Majesty, for the Establishment of Asylums for the Lunatic Poor in Ireland," it was enacted, that from and after the passing of the said Act, it should and might be lawful for the Lord Lieutenant or other Chief Governor or Governors of Ireland, by and with the advice of His Majesty's Privy Council in Ireland, from time to time, and at all times whenever and so often as it should seem expedient to him or them so to do, to order and direct that any Asylum or Asylums for the Lunatic Poor in Ireland should be Erected and Established in any place, in and for any District in Ireland, in lieu of, and in addition to any Asylum or Asylums erected under the authority of the said Act of the 1st and 2nd years of the Reign of his then present Majesty, and from time to time to Alter and Change the District or Places in and for which any such Asylum or Asylums should have been or should be Erected under the authority of the said Act.

And whereas, in pursuance of the powers given by the said Acts respectively, the Lord Lieutenant, by and with the advice and consent of the Privy Council in Ireland, did, by Orders bearing date the 26th day of June, 1830, and 11th day of April, 1835, respectively, order and direct that the District of the Connaught Lunatic Asylum should consist of the counties of Galway, Mayo, Roscommon, Sligo, Leitrim, and the county of the town of Galway.

And whereas, under and by virtue of a further Order in Council, as aforesaid, bearing date the 17th day of

April, 1847, the said counties of Leitrim and Sligo were severed from the said Connaught District, which thereupon consisted of the counties of Galway, Mayo, Roscommon, and the county of the town of Galway.

And whereas it is now deemed expedient that an Asylum for Lunatic Poor should be Erected and Established in the neighbourhood of the town of Castlebar, in the county of Mayo, for a District to consist of the county of Mayo only; and that for that purpose the said county of Mayo should be severed and separated from the said Connaught or Ballinasloe District.

Now We, the Lord Lieutenant, by and with the advice and consent of Her Majesty's Privy Council in Ireland, do, in pursuance of the powers vested in Us, by the said Acts or otherwise, hereby order and direct that there be Erected and Established in the neighbourhood of the town of Castlebar, in the county of Mayo, in and for the said proposed new District of Mayo, an Asylum sufficient to contain and accommodate 250 Lunatic Poor, such Asylum to be called the Mayo District Lunatic Asylum.

And, upon said Asylum being Erected, such further Order will be made as to Us shall seem meet.

Given at the Council Chamber in Dublin, the 29th day of May, 1861.

Maziere Brady, *C.* Fred. Shaw.
R. Keatinge. A. Brewster. J. D. FitzGerald.
G. Brown, *General.*

VI.

By the Lord Lieutenant and Council of Ireland.

Carlisle.

Whereas by an Act passed in the Seventh Year of His late Majesty King George the Fourth, chapter 14, intituled "An Act for the further Amendment of an Act of the First and Second Years of His present Majesty, for the Establishment of Asylums for the Lunatic Poor in Ireland," it was enacted, that from and after the passing of the said Act, it should and might be lawful for the Lord Lieutenant or other Chief Governor or Governors of Ireland, by and with the advice of His Majesty's Privy Council in Ireland, from time to time, and at all times whenever and so often as it should seem expedient to him or them so to do, to order and direct that any Asylum or Asylums for the Lunatic Poor in Ireland, should be erected and established in any place, in and for any District in Ireland, in lieu of, and in addition to any Asylum or Asylums erected under the authority of the said Act of the First and Second Years of the Reign of His then present Majesty; and from time to time to alter and change the District or Places in and for which any such Asylum or Asylums should have been, or should be erected, under the authority of the said Act.

And whereas, in pursuance of the powers given by the said Acts, respectively, the Lord Lieutenant, by and with the advice and consent of the Privy Council in Ireland, did, by Order bearing date the 11th day of August, 1826, order and direct that the District of the Armagh Lunatic Asylum should consist of the Counties of Armagh, Monaghan, Fermanagh, and Cavan.

And whereas, under and by virtue of a further Order in Council, as aforesaid, bearing date the 13th day of September, 1847, the said County of Fermanagh was severed from the said Armagh District, which thereupon consisted of the said Counties of Armagh, Monaghan, and Cavan.

And whereas by a further Order in Council, bearing date the 19th day of March, 1861, it was ordered that there should be erected and established, in or near the Town of Monaghan, in the County of Monaghan, for a proposed new District to consist of the County of Monaghan only, an Asylum sufficient to contain and accommodate One Hundred and Sixty Lunatic Poor, such Asylum to be called the Monaghan District Lunatic Asylum.

And whereas it is now deemed expedient to enlarge the said proposed County of Monaghan District, by adding thereto the said County of Cavan; and for that purpose, and to give effect to this our Order, to set aside or rescind the said Order in Council, dated the 19th day of March, 1861; and in lieu thereof, to provide that an Asylum for Lunatic Poor should be erected and established, as aforesaid, in or near the Town of Monaghan, for a District to consist of the said Counties of Monaghan and Cavan; and that for that purpose the said Counties of Monaghan and Cavan should be hereafter severed and separated from the said Armagh District.

Now We, the Lord Lieutenant, by and with the advice and consent of Her Majesty's Privy Council in Ireland, do, in pursuance of the powers vested in Us, by the said Acts or otherwise, hereby order and direct that the said Order in Council, bearing date the 19th day of March, 1861, shall be, and the same is hereby revoked, set aside, and annulled.

And We, with the advice and consent aforesaid, do hereby further order and direct, that there be erected and established, in or near to the Town of Monaghan, in the County of Monaghan, in and for the said proposed new District, to consist of the Counties of Monaghan and Cavan, an Asylum sufficient to contain and accommodate Three Hundred Lunatic Poor, said Asylum to be called the Monaghan District Lunatic Asylum.

And upon such Asylum as is intended to be hereby provided for, being erected, such further Order shall be made as to Us shall seem meet.

Given at the Council Chamber in Dublin, this 6th day of September, 1861.

John Hatchell, *C.S.* Robert Peel.
Fred. Shaw. James Henry Monahan.
J. D. Fitzgerald. R. Deasy.
G. Brown, *General.*

Correspondence respecting Londonderry Asylum, and the New Asylum for Donegal.

Londonderry, 15th August, 1860.

Sir,—We, the Deputation appointed at a Meeting of the county of Londonderry to wait upon his Excellency the Lord Lieutenant with a Memorial against the proposed separation of the Lunatic Asylum District of the counties of Londonderry and Donegal, cannot separate without offering our thanks to his Excellency for the courtesy and attention with which we have been received.

His Excellency having promised that the grounds of the Londonderry Asylum shall be again inspected before the Government come to a final decision, we request that the Governors of the Asylum may be informed when such inspection will take place that they may have an opportunity of pointing out the peculiar advantages which they think the present site possesses.

The Deputation further request that they may be furnished with Dr. Nugent's written objections to the prayer of the Memorial of this County, for they felt reluctant at the interview so kindly granted to them by his Excellency to trespass longer upon his time, after the lengthened statement of Dr. Nugent, involving, as that statement did, many important questions, some of figures, some of opinion, which did not appear to the Deputation to apply to the arguments brought forward in their Memorial, many of the statistics and facts advanced by Dr. Nugent being entirely new to the Deputation, and at variance with their experience.

The Deputation are still of opinion that the workhouse system, under certain circumstances, may be tried with advantage in the case of imbeciles, and their experience of its working in the Derry Union, fortified by the letters read by Dr. Nugent from medical gentlemen connected with lunatic asylums, afford them very considerable warrant for this opinion.

Again thanking his Excellency for his kind consideration, we have the honour to remain

Your obedient servants,

John Alexander, Sheriff.
Barth. M'Corkell, Mayor.
H. Hervey Bruce, Bart., J.P., D.L.
Fred. W. Heygate, Bart., M.P.
John Barre Beresford, J.P., D.L.
William Hazlett, J.P.

Major-General Larcom, Under Secretary,
Dublin Castle.

Memorial referred to in the foregoing.

To His Excellency George William Frederick, Earl of Carlisle, Lord Lieutenant-General and General Governor of Ireland.

The Petition of the Landowners, Clergy, Freeholders, and Ratepayers of the City and County of Londonderry, assembled by requisition to the High Sheriff,

John Alexander, Esq., High Sheriff, in the Chair,

Respectfully sheweth,

That your Petitioners have heard with much regret that an Order in Council has been passed, dividing the present Lunatic Asylum District of Londonderry and Donegal into two parts, one for each county.

That the diminution of the extent of Lunatic Asylum Districts tends greatly to increase the expense on such diminished areas; for example—in Killarney, the only existing district in Ireland the valuation of which is under £300,000, the rate per pound chargeable to the ratepayers is double the average rate on the whole of Ireland.*

That, in the event of the separation of Londonderry and Donegal, they would form two of the smallest districts in Ireland.

That, under these circumstances, even if Donegal was benefited by the change, Londonderry would have much cause to complain of being left to bear the entire expense of an establishment originally built for three counties, valued at £789,000. But, inasmuch as Donegal will be increased in taxation at least as much as Londonderry, and has joined this county in petitioning your Excellency against the change, Petitioners respectfully trust that your Excellency will not enforce a separation that is considered by the ratepayers so injurious to the interests of both counties.*

That your Petitioners fully recognise the duty of the ratepayers of this country to provide adequate accommodation for the lunatic poor, and as fully admit that increased accommodation is necessary within their district, and that it is a great evil that such unfortunate persons should either be permitted to be at large or be committed to prison. But your Petitioners respectfully contend, that in order to effect this object it is not necessary to diminish the present district, already considerably below the average of Ireland, by separating the counties of Londonderry and Donegal.*

That your Petitioners respectfully suggest that a plan has been successfully carried out in Londonderry of drafting to the workhouse of the union harmless and incurable patients, thereby increasing within the asylum the means of accommodating the unfortunate patients requiring coercive treatment and more active medical care; and, inasmuch as patients under this system are supported at half the expense they cost in asylums, Petitioners pray your Excellency that this plan may receive a fair trial, on a more extended scale. But, even if this arrangement could not be carried out, or, being carried out to a limited extent, were found inadequate, Petitioners respectfully submit that increasing the building of the present asylum would be quite as efficient a means of supplying the acknowledged want of accommodation, and could be effected for about one-fifth of the cost necessary for the buildings and increased staff required for a second asylum.

That, geographically, the situation of the city of Londonderry, which was originally a city of Donegal, is as good for Donegal as Londonderry, and forms a convenient locality for both counties, having extensive and easy communication with all parts of Donegal, and possessing facilities for supplies greater than could be had in any locality within that county.

That your Petitioners estimate the additional cost upon the two counties for building and second staff consequent upon the separation, as follows:—

Cost of new buildings, &c., for Donegal, . .	£40,000
Repayment in fourteen years, . .	per annum, £2,857
Annual cost for second staff, . .	per annum, 1,231
Total extra annual charge on the two counties,	£4,088*

That Petitioners estimate the cost of buildings at £40,000, from the fact of three recently erected asylums, Killarney, Sligo, and Omagh, having cost £40,500 each, and Petitioners estimate cost of staff at £1,231, being the sum returned as actually paid in 1856 for Londonderry Asylum.†

Petitioners submit that, inasmuch as this year's total charge upon the counties of Londonderry and Donegal, for maintenance of establishment, instalment for land, and repayment for Tyrone, is £5,051 18*s.* 11*d.*, the foregoing increase of £4,088 would be more than eighty per cent. upon the present taxation.

That, so far as Petitioners can estimate, this increased amount of £4,088 would entail upon Donegal an increased annual taxation of £2,500, or eighty-three per cent. upon the present expenditure, and upon Londonderry an increased annual taxation of £1,588, or seventy-six per cent., for extra buildings and extra staff alone.

Petitioners respectfully submit that your Petitioners are prepared cheerfully to submit to any increased charge which may be necessary for the proper support and safe keeping of such additional patients as may require relief, but the foregoing increase of £4,088 being for buildings and official salaries alone, the ratepayers would be subject, in addition to said increase of £4,088, to a further large sum for the necessary maintenance of all additional patients requiring relief. How much such maintenance would cost Petitioners do not estimate; but if the new building is to be of any use, the amount must be considerable.

That the object required—namely, accommodation for additional patients, can be fully attained by the enlargement of the present Asylum, the position of which, as already stated, is particularly suitable for both counties; that there being upwards of thirteen acres within the walled enclosure, and fifteen acres additional, only separated by a road from the other premises, no purchase of land will be necessary; and that the present staff, with a few additional nurses, will be quite adequate to the management of the increased number of patients.‡

That Petitioners estimate the new building with any repairs necessary to the present house, at £10,000.

Annual Charge, ...	£714
Increased Staff, ...	120
	834§

Your Petitioners respectfully submit that, in estimating the expense of the proposed addition to the Lunatic

*See Report of Lunatic Inquiry Commissioners, 1859, page 8.

* It is stated that the Lunatic Asylum Commissioners have consented to a more economical plan for building asylums. If cost reduced one-fourth, it would reduce this estimate £714; on the other hand, the actual cost of staff at Londonderry, for the present year, is £211 higher than this estimate, besides £191 3*s.* 4*d.* superannuations.

† See Inspectors' Report, 1859, page 10, and Commissioners' Report, 1858, page 47.

‡ See Report of Commissioners, 1858, page 44.

§ Government requires repayment of advances for Lunatic Asylums in fourteen equal annual instalments.

Asylum at Londonderry, they base their calculations upon the cost of a building actually erected at Chester, under circumstances that seem very similar to those of the Londonderry Asylum. The plan is found in the Report of the English Commissioners in Lunacy, printed 25th May, 1860, and the cost paid for a building accommodating 217 patients is £7,833 5*s.* 4*d.*

Your Petitioners therefore respectfully pray that the Order in Council for the separation of Londonderry and Donegal may be rescinded—that the plan of drafting harmless and incurable patients to the Workhouse may be permitted to have a fair trial, or that such increased accommodation as may be required may be provided in connexion with the present Asylum.

Office of Lunatic Asylums,
Dublin Castle, 24th August, 1860.

Sir,—In accordance with the foregoing request from the highly influential gentlemen composing a deputation from the county and town of Derry, to the Lord Lieutenant, viz., that I should reduce to writing the views I had the honour to submit at their recent interview with his Excellency, I shall endeavour to do so with as much accuracy as my memory will permit. To avoid, however, any appearance of direct or individual opposition to the gentlemen in question—for whom I entertain the greatest respect—it may be permitted me to premise that I argued on general principles, and not against any particular locality or district, when discussing the subject of poorhouse accommodation for the insane.

I believe I commenced by stating, that the design and construction of workhouses were for a totally different object than for the due maintenance of lunatics in them; that they were intended to afford as economical a refuge as possible for the destitute, and being devoid of comforts, beyond what were absolutely needed, to serve thereby as a certain test of indigence, and not as an encouragement to idleness.

I stated that the idiot cells connected with poorhouses were, for the most part, gloomy, ill ventilated, and utterly unfurnished, opening into yards, many of them not sixty feet square, and surrounded by high walls, excluding light and air; that in those cells, epileptics, idiots, lunatics, the tranquil, the noisy, the melancholic and the dangerous, were liable to be congregated together; and that thus *classification*, the most important adjunct in the treatment of the insane, no matter what the type of their malady, must be altogether disregarded. I observed that a large portion of the inmates of asylums were far above indigence, being the wives or children of respectable ratepayers, frequently parents themselves, who for years may have assisted in supporting institutions, in the benefits of which they were now participating; that it would be unjust as regarded such parties, and to the feelings of their relatives out of doors, to reduce them to the category of paupers, or to diminish the comforts and the ease which they had previously enjoyed in asylums where they were at all times under medical supervision as well as competent attendants; and further, that it was erroneous to pronounce cases to be incurable because chronic, inasmuch as while the most tedious and unpromising occasionally recovered, they were almost always certain to improve under continued and judicious treatment, whereas the poorhouse was, generally speaking, a bar *even* to amendment. In illustration, I referred to two idiots whom I had very recently seen, and who, in consequence of their inveterate habits of filthiness, had to be transferred to the Asylum at Mullingar, where they gradually improved, and are now not only cleanly, but convertible to some use, and thus raised in the social scale. I objected to the recognition of workhouses as suitable abodes for the insane, from the abuse it might lead to in their being employed as receptacles for lunatics in the early stages of their disease, when so much depends on the proper means and mode of treatment; and referred in corroboration to what Mr. John Stewart reported, at a late interview, to his Excellency, as the result of local experience in Londonderry itself.

Next, as to the conversion of the existing idiot department of poorhouses into something like suitable accommodation for lunatic inmates, I stated that my colleague, Dr. Hatchell, after visiting numerous unions for the purpose, entered with Mr. Burke (Private Secretary to Mr. Cardwell) into a calculation of the cost thereof; their estimate made out in detail (and deemed moderate by Mr. Wilkinson, formerly Architect to the Poor Law Board), averaged £300 for each of the 163 union buildings in Ireland. With regard to the comparative expense of lunatic maintenance in workhouses and district asylums, I took the liberty of saying, that so far as I could judge, the deputation laboured under a mistake, for, according to the last Report of the Poor Law Commissioners, 1859, the average number of paupers in union workhouses amounted to 40,369, and the expenditure on *indoor* relief to £413.000, or about £10 6*s.* per head per annum; and that if infants at the breast, or children under two years of age, were taken from the total, and allowance made in fair proportion for their support, the average cost would be higher.

I referred to the Waterford Poorhouse, which I had just visited, in support of two positions assumed by me—the *first*, that the best regulated workhouses, *quoad* lunatic accommodation, must of themselves be inferior; the second, that a misconception existed as to their economic working in regard to the insane. I stated that the Waterford Poorhouse was contiguous to the District Asylum; that Mr. O'Grady, the Master, a very intelligent officer, had paid for many years, and with the full sanction of the Guardians, great attention to its lunatic inmates; that from time to time patients belonging to the union, when becoming dangerous or excited, were exchanged at the asylum for tranquil and chronic cases, but that it frequently happened that the latter, in their turn, soon became violent and ungovernable, without suitable means at hand of control or treatment. Hence he came to the conclusion, from experience, that lunatic wards in a poorhouse were *inadvisable* (a conclusion which I may parenthetically remark has, to my own knowledge, been generally arrived at by local Poor Law authorities, who are often obliged to have lunatics committed to gaol as dangerous). Then, as to economy, Mr. O'Grady calculated the cost of each lunatic in the Waterford Poorhouse, imperfect as it was, at £13 a-head per annum. In asylums, the average cost similarly (deducting £5,600 laid out on buildings), was about £18 10*s.* per patient. In conclusion, on this branch of the discussion, I reminded the Under Secretary of a circular addressed in 1858 by the Grand Jury of Armagh to the Grand Juries of Monaghan and Cavan, as well as to the different Poor Law Boards of the district,—the object being to provide accommodation in workhouses for chronic cases of insanity. After a year's trial, the result was, that at the late Spring Assizes, which I attended, the Grand Juries of Cavan and of Monaghan decided on having an asylum each in its own county; and, subsequently, the Armagh Governors unanimously approved of a separation, all parties memorialing the Lord Lieutenant to sanction the proposed arrangement, or, in other words, *the establishment of two new asylums in the district.* The next subject of discussion at the interview had reference to the number of patients who, at the time located in asylums, might be deemed suitable objects for a workhouse residence. On this head I observed, that although my colleague and I had already formed a calculation, I had written the previous week to the Resident Physician at Derry, who informed me that, in his opinion, fifty-seven of the inmates there (out of 225), might, if *carefully* attended to, be sent to a poorhouse. I then read letters of reply to a like inquiry made of the Physicians at Belfast, Carlow, and Cork, whom I purposely selected as being gentlemen of the greatest experience, and for over twenty years attached to asylums of large size; they agreed that the numbers on which a *trial might* be made, would be, at the outside, from ten to twelve per cent. (a proportion of removable lunatics so small, as, in the opinion of the Inspectors, would render the establishment of a second and separate system of maintenance not only uncalled for, but more expensive, whilst its approval by the Executive would mix up the

control of another department with that of the Commissioners of Poor Laws).

Under the foregoing circumstances, I directed the attention of his Excellency to the Act of the 1st and 2nd George IV., which, regarding the subject of lunacy in its true light, *as an exceptional one*, and requiring specific legislation, empowered the Lord Lieutenant in Council to direct the providing of *suitable* accommodation for the insane of all classes; and I respectfully submitted, that those actually in asylums should not be placed in a less satisfactory position than they were in at present; and that in case his Excellency, on consideration, should be pleased to sanction the maintenance of lunatics in poorhouses, that due provisions should be secured to them, in regard to the means of classification and employment out of doors, as well as to their dietary, clothing, and supervision.

A desultory conversation subsequently took place as to the extent of lunacy in Ireland, when I remarked, that so far as statistics authorized me, I should consider one individual in every 800 of the population at large, as a fit subject for a regularly constituted asylum, exclusive of imbeciles, harmless epileptics, and certain idiots, who might be elsewhere located. I adduced in support of this observation, Kilkenny, Waterford, Limerick, Cork city, &c., where the proportion of insane belonging to them bore out this ratio fully.

On reference being made by one of the deputation (Sir F. Heygate), to Donegal, I set down, as in accordance with the Report of the Royal Commissioners, 368 lunatics as being unprovided for in the district (on this point speaking from memory, and in reply, I find I made a mistake—I should have said 338), which latter number, with the 223 in the Derry Asylum, on an aggregate population of 447,000, would, according to the statistics above referred to, be about one in 800.

As on the question of allocating a poorhouse altogether to lunatic paupers the deputation did not feel disposed to raise an issue, I proceeded to give the reasons entertained by the Inspectors against the enlargement of the existing asylum at Derry, which, erected more than thirty years ago for the reception of 104 patients, had since been crowded to more than double that number, without any structural additions, but simply by the conversion of various apartments, store-rooms, workshops, &c., into dormitories, thus materially interfering with the general economy and utility of the institution; for example, the day-rooms became too small for their occupants; there were no places set apart for indoor employment; there was no space for lavatories or baths; there was neither a chapel nor infirmary; the laundry and the kitchen were inconvenient, being built for the use of one-half less inmates than the house actually contained. With an increase of patients, attendants necessarily increase; but it was not so in regard to accommodation for the latter, or for resident officers. By reference to a map of the ground on which the buildings were erected, I endeavoured to show, that laterally the asylum could not be enlarged without touching on the boundary walls; its front was costly, of cut stone, and could not be interfered with; the right wing was only 109 feet from the town road, or rather a street, on which houses were being erected in close proximity; the boundary wall on the left was 130 feet distant, beyond which were grounds belonging to the Foyle Seminary; while in the rear, at a distance of 200 feet, commenced a rapid incline; this rise averaged fifty feet, the highest point being sixty-five—the pitch of the asylum roof about forty. Under these circumstances, I submitted to his Excellency that the existing building, constructed for 104 patients, could not possibly be made the nucleus of an establishment, with suitable offices, for 420 or 450 lunatics, and even if there was space enough to admit of enlargement (bearing in mind a now recognised doctrine, *first* propounded in *this* country, and since adopted by the English Commissioners in Lunacy, viz., That no hospital for the insane should contain more than 300 beds at the outside, both in a sanitary and fiscal point of view), the question would still exist as to the advantages of erecting a second asylum in preference to enlarging the present. At this point Sir Hervey Bruce objected to a separate institution, from the double expense which he conceived would be thereby entailed, and presented a calculation in detail of the comparative cost. I at once acknowledged there would be a certain difference, but still not to the apprehended extent; in the first place, as to servants and attendants, be the asylum large or small, or be there two distinct ones, it made no variation, as attendants were employed in proportion to the number of patients (say one of the former to twelve or fourteen of the latter); then, as to the staff or officers, the resident and visiting physicians, chaplains, matron, &c., I remarked, that with a large increase of duties and responsibility, as when an asylum was doubled, its officers sought not only an addition to their salaries as a general rule, but that the Local Boards recommended their applications through the Inspectors, for the sanction of the Lord Lieutenant, and frequently appointed assistants.

With respect to a separate asylum for Donegal, I stated that the Inspectors still adhered to their recommendation, and for the reasons assigned in their Reports to the Lord Lieutenant,—that, as the institution at Derry was not central even for the county of Derry, it was still less so for Donegal, which was more than twice as large, and contained a population greater by nearly 60,000, in consequence of which it would have to pay considerably more than its partner, either for enlarging the old, or erecting a new building at Derry, without a proportional benefit on account of the remoteness of its more distant portions, while, if a circle of twenty or thirty miles' diameter were described immediately round the asylum, little more than a third of it (exclusive of water), would belong to Donegal. I also observed that the farm at Derry would be too small for 420 or 450 patients; that for such a number there should be one of from seventy to eighty acres, and that thus the purchase of from thirty-five to forty acres, to make up the difference, would be necessarily entailed, and which, in the immediate vicinity of so important a town as Derry, must be extremely high. In answer to a question from Sir Hervey Bruce, as to the quantity of ground proposed by me, I replied that the Commissioners in England fixed on an acre to four patients, but that we thought one to six would be sufficient.

Subsequently Sir Richard Griffith expressed his views with reference to the size of asylums, and to conversations he had had on the subject with the English Board of Control.

I trust in the preceding statement I shall appear to have given a faithful summary of the observations and opinions submitted by me at the late interview of the Derry deputation with his Excellency the Lord Lieutenant; and that although my colleague, Dr. Hatchell, and I may materially differ from the gentlemen composing it as to the most judicious course to be adopted, they will acquit us of all bias or prejudice, our sole desire being to act as best we can for the lunatic claims of the community at large. For my own part, I am free to acknowledge that, *primâ facie* it appears a hardship on Derry (which took an initiative in lunatic charities), that its two large and wealthier partners, Tyrone and Donegal, should separate from it, thus throwing an institution imperfect as to modern science, with its pecuniary responsibilities, on the smallest county, after a conjoint use of the premises for over thirty years. Still, under the authority of his Excellency, and on equitable grounds, I think the difficulty admits of a solution; and that Derry, retaining it for itself alone, may improve the existing Asylum at a less outlay than if continuing to be associated with Donegal; the institution was enlarged to meet the necessities of both counties by an additional accommodation for 260 or 300 patients.

I have the honour to be,
Sir,
Your obedient and faithful servant,
JOHN NUGENT.

Major-General Sir Thomas Larcom, K.C.B.

Proposal to extend the Benefits of Swift's Hospital: in a Letter to the Hon. and Very Rev. R. Pakenham, Dean of St. Patrick's, and Christ's Church.

To the Hon. and Very Rev. Dean Pakenham.

Dublin Castle, 24th December.

Dear Dean Pakenham,

I have to apologize for not writing to you sooner with reference to the suggestions made by me to the Board when I had the pleasure of meeting it on the 2nd inst., at Swift's Hospital. You were desirous of having my opinions reduced to writing, that they might thus be more leisurely taken into consideration.

I had previously remarked, on frequent occasions, the very backward condition of your institution, erected, no doubt, at a time when little was practically understood of the treatment of insanity. As a Lunatic Asylum it admits of no proper system of classification, and has not sufficient ground to afford outdoor exercise and employment to the number of inmates it contains.

I believe I am correct in saying that within the last thirty years no material structural improvements have been, or indeed could well be, effected in it; hence, its corridors are gloomy and insufficiently ventilated, particularly those on the basement story, which, independently of their dark and cheerless aspect, are damp and consequently liable to be more or less unhealthy, especially in the winter season. The sewerage is very deficient, the water-closets, for the most part, are ill-constructed, and occasionally offensive; there are no proper baths, no suitable apartments for refractory, dangerous, or dirty patients.

Such being generally the condition of the establishment, the question naturally presents itself, can it be effectually improved? In my opinion the concerns, as a whole, scarcely admit of any alteration for the better.

As to an increase of land, it is impossible to procure it; and when it is recollected that to a pauper Asylum for 250 patients, at least fifty acres should be attached, the disproportion of five or six for 150 lunatics of the higher and better classes of society, becomes strikingly apparent.

Next, as regards the gloomy character of the interior —the very situation of the building precludes the hope of its being obviated. If new windows be opened out, or the old ones enlarged, the prospect, save from some few points of view, will simply extend to the adjoining dead walls or neighbouring buildings.

The sewerage may no doubt be altered, and new but indifferent accommodation obtained in regard to bath-rooms, water-closets, &c., the expense attending which must of necessity be very great, and, as I think, quite incommensurate to the results. But I apprehend that no ingenuity can secure, in St. Patrick's Hospital, that most essential of all requisites in the treatment of insanity—an effective system of classification.

I am quite aware that to the proposal which I am about to submit an objection may be raised, grounded on the wording of Dean Swift's will; but I am disposed to hope that nothing antagonistic to the spirit of his wishes will be found therein. His object was a most benevolent one. He desired, with his means, to establish a charity for the insane of his own country; and if the high and influential body to whom is intrusted the duty of carrying out his intentions, can do so in one way more fully than another, these intentions will only have been the better realized. When Dean Swift, for example, directed an Asylum to be erected near Steevens's Hospital, he did so, no doubt, thinking that thereby he should procure for it the best medical attendance; at the same time that the edifice itself would be in an unenclosed space—in fact, in the open country. At the period of making his will, judging from its internal evidence, he would seem to have laboured under the belief that there were not fifty insane persons in the kingdom, or a sufficient number to people his intended Hospital. Up to 1780, so little regard was paid to mental affections, that there were scarcely 200 lunatics supported in our charitable institutions, whereas at present we have in District Asylums alone over 4,000, with an additional accommodation about to be effected for nearly 2,000 more.

As bearing on the merits of the scheme which I am about to submit for your consideration, I may observe that, now-a-days, the *insane poor* of Ireland (*i.e.* those maintained out of the public rates) are, relatively speaking, in a better position than lunatics from among the respectable classes of society.

Having indulged in these preliminary, and what may at first sight appear unnecessary, remarks, I come to the proposal which I venture respectfully to submit to the Governors of St. Patrick's Hospital, and which is, to abandon the existing premises, and to erect, on a salubrious, cheerful site, at a convenient distance from the city (say, not more than three or four miles) a regular institution, replete with modern improvements, for the effective treatment of mental diseases, but more particularly in their earlier or acute stages—thus to convert the funds left by Dean Swift to the securing a greater benefit to society at large than could be attained, were they, as is now the case, in great measure simply devoted to the maintenance of incurables; for, notwithstanding that the Institution commands the services of two of the most eminent practitioners in this kingdom (I refer to Doctors Cusack and Croker), the recoveries effected in it (the vast majority of admissions being old and chronic cases), are below the average of any similar establishment in this country.

Through the economical management of your Board, and the gradual accumulation of its savings, I find, in round numbers, £20,000 placed in Bank to the credit of the Asylum Trustees. Estimating the concern as it stands, with all its furniture and fixtures, at £5,000, a sum of £25,000 would thus become available for my project.

Now, as to the outlay of this money, for the sake of clearness, I shall place it under eight different heads, embracing the principal items of expenditure connected with the erection of an hospital for the insane—

	£
1. I calculate the cost of purchasing from twenty to twenty-four acres of land at . . .	3,000
2. The building of an Asylum for 200 patients, at £80 per head, ...	16,000
3. Furniture for patients, ...	2,200
4. Do. staff and servants, ...	1,200
5. Architect's fees, „	1,200
6. Kitchen and laundry apparatus, . . .	500
7. Airing grounds, ...	500
8. Incidents, ...	800
Total, ...	25,400

or a sum representing, in Government securities, an annual income of about £800.

The inmates of St. Patrick's Hospital at present number 141, of whom 85 pay various sums for their maintenance, the remaining 56 being free, and having expended on them more than the unaided proceeds of the Dean's endowment; for it should be remembered, that, independent of some minor benefactions, over £22,000 has from time to time been bestowed by Government on the Institution.

I propose to divide the patients in the new Asylum into four classes; not, however, with a view to any difference of treatment in their regard—

1st Class.—To contain sixty-five free patients in the widest acceptation of the term, or fifteen more than originally proposed.

2nd Class.—To contain forty patients, each paying £35 a-year. (I do not name a lower stipend, as £20 per annum is about the average expense per head in District Asylums, and which are accessible to individuals who cannot afford to meet the cost of Private licensed houses).

3rd Class.—To consist of forty-five patients, each paying £60 a-year.

4th Class.—Which would benefit most by the proposed Establishment, to comprise fifty patients paying £80 per annum each.

Should the friends of any patient desire an attendant for the sole use of the party, or any extra indulgence,

within or out of doors, such indulgence to form the subject of an additional charge.

According to the above scale, with the Swift estate of £2,200, an income would accrue to the establishment of £10,300 a-year. Assuming the cost of each lunatic, on an average, at £44, exclusive of the supplies from the farm, in milk, vegetables, &c., an annual saving of £1,500 would be effected, which sum, accumulating from year to year, would in time afford an opportunity of extending the charity either to other places in the vicinity of the metropolis, or to some provincial towns; thereby not alone multiplying the most noble, perhaps, of all Christian foundations, but associating with them the name of Swift himself.

"Et nunc servat honos sedem tuus, ossague nomen,
Hesperaiâ in Magnâ, si qua est ea gloria signat."

In fixing on £80 a-year for the fourth class, I estimate that sum as being from 10 to 12 per cent. below the average charge in Private licensed houses. I do not wish to injure well-conducted establishments, neither do I think my proposal tends in that direction; whilst I would procure for many inmates of inferior ones, as well as for other lunatics singly located, comforts to which they are now strangers. A very considerable amount of money is annually transmitted from this country for the support of lunatics belonging to it, and who, in the presumed absence of adequate accommodation at home, pay largely—even as high as £200 a-year—in England and elsewhere, and in hospitals, too, as at the Institution near Perth, similar to the one which I now recommend.

Taking into account the enjoyments which the present inmates of St. Patrick's Hospital would derive from a residence such as the one proposed (and they have a prescriptive right to be fully considered in any future arrangement), and comparing them with the negation of many comforts, as well as a deficiency of curative advantages, unavoidable, from the nature of their present abode, we must all admit the existence of a very marked contrast.

With regard to the intended accommodation for 200 patients, and the mode of appropriating it, the Board of Governors should, as heretofore, have full and sole authority. I would, however, in a spirit of equity, take the liberty of suggesting (and in doing so I look to precedents in foundations of a charitable character, established in this and other countries, both prior and subsequent to the Reformation, and of which we have a recent instance near this city in the case of the Donnybrook Retreat, belonging to the "Society of Friends"), that, as Dean Swift—a dignitary of the Established Church—had, out of an income solely derived from his benefice, erected and endowed St. Patrick's, of the sixty-five free beds, twelve should be reserved for clergymen of his persuasion, or for immediate members of their families, suffering under the sad visitation of insanity. I would also allocate six beds in No. 2, and as many more in No. 3 class for a similar purpose. The clergy of the Established Church in Ireland of all grades number about 2,100; and assuming that their families average six persons, constituting an aggregate of 12,600 persons, an ample provision would thus be secured to them, according to the ratio of insanity among the population at large.

After this limited appropriation as suggested, there would remain 176 beds at the disposal of the Board, in the distribution of which I am satisfied the Governors of Swift's Hospital would not be influenced, one way or the other, by considerations of creed or party—the same privileges and the same freedom being alike conceded to all, in that spirit of benevolence which has ever characterized our public institutions for the insane.

Having thus endeavoured, in accordance with my promise, to commit my views and opinions as concisely as possible to paper, it affords me much satisfaction to say that my colleague, Dr. Hatchell, whom I consulted on the subject of this communication, coincides with,

My dear Sir, your faithful Servant,

John Nugent.

Decision of the Lord Lieutenant on the subject of the Maryborough Investigation.

Dublin Castle, 4th December, 1860.

Gentlemen,

Referring to the correspondence which has taken place relative to the District Lunatic Asylum at Maryborough, I am directed by the Lord Lieutenant to state that His Excellency has had under his consideration the report of the investigation lately held at that place, and I am desired to express the deep regret which His Excellency feels at the proof thus afforded of the total want of harmony among the principal officers of that institution, by which alone the duties of the Asylum can be efficiently carried on.

I am further to state that His Excellency will take an early opportunity of removing Dr. Burton, whose duties are confined to the Asylum, to another institution of the same nature. His Excellency, at the same time, feels it no less necessary to impress on Dr. Jacob that, while sensible of the zeal he has displayed in the discharge of his duties, His Excellency is of opinion, that by forbearance and consideration for the feelings of those associated with him, much of the inconvenience and discord which have prevailed in the Asylum at Maryborough might have been avoided.

I am also desired to state that, in order that no steps on His Excellency's part may be wanting, as far as is possible, by regulations, to provide against misunderstanding and collision of authority in future, His Excellency will cause certain alterations in the rules to be laid before the Privy Council for consideration.

I am, Gentlemen, your obedient servant,

(Signed) Edward Cardwell.

To the Governors of the District
Asylum, Maryborough.

Circular to Proprietors of Private Lunatic Asylums regarding Non-Observance of Act 5 & 6 Vic., c. 123.

Office of Lunatic Asylums,
Dublin Castle, 11th June, 1860.

Sir,—The non-observance, in many points, of the Act 5 and 6 Vic., c. 123, having been brought under the notice of the Inspectors, and particularly with reference to the admission of patients, the Orders and Medical Certificates, the discharges, and the transmission of documents to this Office within the time appointed by the Act, I am directed to draw your attention to the fact that the Law considers the subject of such importance as to regard the wilful neglect to comply with its requirements as a misdemeanor; and to inform you, in consequence of the frequent occurrence of irregularities of the nature indicated, that the Inspectors will feel themselves compelled to enforce a strict compliance in future with the provisions of the Statute.

I am, Sir, your obedient servant,

W. J. Corbet, Chief Clerk.

To the Proprietors of Private
Lunatic Asylums.

DUBLIN: PRINTED BY ALEX. THOM & SONS, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

67

LOAN FUND BOARD OF IRELAND.

TWENTY-THIRD

ANNUAL REPORT

OF THE

COMMISSIONERS

OF THE

LOAN FUND BOARD OF IRELAND,

PURSUANT TO THE ACT 6 & 7 VICT., CAP. 91,

FOR 1860.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEXANDER THOM AND SONS, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1861.

[*Price 2½d.*]

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TWENTY-THIRD ANNUAL REPORT

OF THE

COMMISSIONERS OF THE LOAN FUND BOARD OF IRELAND.

In conformity with their prior Reports, the Loan Fund Board submit the following Summary of the Operations of the Loan Funds in Ireland during the past Year:—

Counties.	Number of Societies.	Amount Circulated during the Year 1860.	Number of Loans in 1860.	Gross Profit.	Interest on Capital, Expenses of Management, Bad Debts, and Loss on Notes.	Net Loss.	Net Profit.
		£		£ s. d.	£ s. d.	£ s. d.	£ s. d.
Antrim,	1	26,312	4,241	579 18 7	397 8 10	–	182 9 9
Armagh,	1	19,129	3,580	391 11 1	439 6 6	47 15 5	–
Carlow,	–	–	–	–	–	–	–
Cavan,	1	17,248	3,130	347 17 11	278 6 11	–	69 11 0
Clare,	1	3,923	1,125	112 13 10	112 0 7	–	0 13 3
Cork,	11	40,860	12,740	1,193 4 10	852 16 8	–	341 3 8
Donegal,	7	73,188	15,337	2,028 12 5	1,646 15 7	–	380 8 5
Down,	1	27,667	3,158	547 2 10	428 15 6	–	118 7 4
Dublin,	3	14,953	2,518	609 10 0	351 13 5	–	257 15 9
Fermanagh,	7	58,885	9,912	1,894 19 7	1,197 2 5	–	695 16 1
Galway,	2	12,677	2,705	290 2 4	243 13 4	–	46 9 0
Kerry,	–	–	–	–	–	–	–
Kildare,	2	13,474	3,084	506 11 9	402 3 1	–	104 8 8
Kilkenny,	4	6,770	2,552	188 6 8	152 8 3	–	35 18 4
King's,	2	10,328	3,347	359 0 7	248 9 8	–	110 10 11
Leitrim,	2	22,354	4,438	643 5 6	425 15 7	–	217 9 11
Limerick,	5	28,494	6,106	714 14 5	506 19 3	–	207 15 2
Londonderry,	4	51,048	10,882	1,519 1 9	1,070 4 11	–	442 16 9
Longford,	3	21,533	4,599	792 0 8	534 4 7	–	258 0 1
Louth,	–	–	–	–	–	–	–
Mayo,	3	8,250	2,011	216 0 11	212 19 11	–	5 7 6
Meath,	1	7,193	1,662	157 14 7	140 19 1	–	16 15 6
Monaghan,	2	19,668	5,250	450 12 8	344 10 7	–	106 2 1
Queen's,	7	56,170	15,128	1,768 19 7	1,503 8 9	82 14 5	293 0 11
Roscommon,	1	22,966	4,393	665 4 8	578 7 3	–	86 17 5
Sligo,	4	31,191	7,374	816 2 3	724 16 6	19 14 6	111 0 4
Tipperary,	6	67,014	18,818	2,123 0 9	1,512 19 8	–	610 1 2
Tyrone,	17	184,456	32,911	5,565 0 10	4,689 5 5	66 10 10	1,105 8 1
Waterford,	2	17,253	4,003	399 2 4	360 9 5	–	38 12 11
Westmeath,	3	17,511	4,665	569 17 8	431 9 3	–	138 8 4
Wexford,	3	25,942	6,109	923 1 1	694 4 11	–	276 4 2
Wicklow,	4	11,280	2,577	403 15 1	298 9 1	–	105 6 6
Total,	110	917,737	198,355	26,777 7 2	20,780 4 11	216 15 2	6,362 19 0

The following Table shows the comparative operations of Loan Funds from the period of the Board's First Report:—

Years.	—	No. of Societies Transmitting Annual Accounts.	Amount Circulated.	Total Circulation.	Number of Loans issued, or of Pledges received.	Total Number of Loans and Pledges.	Net Profit applicable to Charity and Reserve Fund.	Total Profit.
			£	£			£	£
1838	In the Returns of these years the Loan Funds and Monts de Piété were not separately classified,	50	–	180,526	–	148,528	–	2,547
1839		125	–	816,473	–	352,469	–	11,047
1840		215	–	1,164,046	–	463,750	–	15,477
1841	Loan Funds, 268 Monts de Piété, 8	276	1,438,598 61,935	1,500,533	411,303 351,408	762,711	14,853 –	14,853
1842	Loan Funds, 300 Monts de Piété, 7	307	1,691,871 46,196	1,738,067	488,702 293,985	782,687	18,967 –	18,967
1843	Loan Funds, 298 Monts de Piété, 7	305	1,650,963 30,878	1,681,841	490,870 178,528	669,398	14,149 –	14,149
1844	Loan Funds, 259 Monts de Piété, 4	263	1,702,918 5,801	1,708,719	488,207 42,632	530,839	8,949 98	9,047
1845	Loan Funds, 255 Monts de Piété, 5	260	1,857,457 12,880	1,870,337	507,339 85,319	592,658	9,695 67	9,762
1846	Loan Funds, 250 Monts de Piété, 5	255	1,770,397 8,194	1,778,591	470,291 48,792	519,083	8,332 72	8,404
1847	Loan Funds, 228 Monts de Piété, 4	232	863,647 3,468	867,115	231,101 21,550	252,651	– –	–
1848	Loan Funds, 177 Monts de Piété, 1	178	717,865 1,269	719,134	190,407 10,948	201,355	– –	–
1849	Loan Funds, 160 Monts de Piété, 1	161	649,934 1,393	651,327	175,673 9,452	185,125	761 28	789
1850	Loan Funds, 132 Monts de Piété, 1	133	662,794 1,238	664,032	189,235 8,099	197,334	1,880 19	1,899
1851	Loan Funds, 123 Monts de Piété, 1	124	712,073 1,512	713,585	191,050 9,861	200,911	2,992 –	2,992
1852	Loan Funds, 113 Monts de Piété, 1	114	739,056 1,450	740,506	191,870 9,461	201,331	5,962 14	5,976
1853	Loan Funds, 112 Monts de Piété, 1	113	842,803 1,208	844,011	210,622 7,734	218,356	6,878 5	6,883
1854	Loan Funds,* .	115	–	870,024	–	208,917	–	7,253
1855	Loan Funds, .	113	–	883,321	–	208,655	–	8,037
1856	Loan Funds, .	115	–	917,686	–	202,420	–	6,527
1857	Loan Funds, .	111	–	929,653	–	204,394	–	7,816
1858	Loan Funds, .	111	–	930,170	–	200,200	–	7,459
1859	Loan Funds, .	112	–	936,217	–	201,807	–	6,769
1860	Loan Funds, .	110	–	917,737	–	198,355	–	6,363

The number of Loan Funds in existence in 1860, on Board's Register, was 110; compared with the number of 1859, there has been a decrease of two Societies in the past year.

The circulation of Loan Funds throughout the country, connected with the Board in 1860, amounted to £917,737; it fell short of that of the preceding year by £18,480.

The Capital of Loan Funds actually working in 1860, amounted to £224,857; it fell short of that of 1859 by the sum of £11,190.

The number of Loans made in 1860 was 198,355; it fell short of that of 1859 by 3,452.

The number of Notes sold by the Board in 1860, at 1*d.* each, was 199,600; and

* From 1853 Monts de Piété ceased to exist connected with Loan Funds.

fell short of the number sold in 1859 by 9,300. The produce of the sale of Notes in 1860 was £831 13*s.* 4*d.*; showing a decrease compared with that of 1859 of £38 15*s.*

The number of Debentures sold in 1860, by the Board, at 1*s.* each, was 353; the produce of the sale of which was £17 13*s.* There was an increase in the number sold in 1860, as compared with that of 1859, of 17, and in the produce of the sale of 17*s.*

The Gross Profits derived by Local Societies from Discounts, Fines, Sale of Application Papers and Cards, in 1860, amounted to £26,777 7*s.* 2*d.*; they exceeded the amount derived from the same sources in 1859 by £299 2*s.* 1*d.*

The amount of Fines (one of the above-named items) in 1860 was £5,550 9*s.* 10*d.*; there was an increase of fines in that year, as compared with the same item in 1859, of £746 3*s.* 2*d.*

The amount of Surplus Profits applied to charitable or useful purposes in the several localities of Loan Funds, in 1860, was £3,300 8*s.*; showing an increase of such grants, in that year, as compared with that of 1859, of £464 8*s.* 8*d.*

The Board's Income in 1860, derived from ordinary sources of Revenue:—

Sale of Notes, Debentures, and Cards,	£849 8 1
Interest on Funds invested in Government Stock,	134 17 4
Total amount,	£984 5 5

The Ordinary Income of 1860 fell short of that of the preceding year by the sum of £31 4*s.* 6*d.*

The total of Board's Receipts from all sources in 1860, viz.:—

Ordinary Income from Sale of Notes, Debentures, and Cards, and from Dividends on Stock,	£984 5 5
Interest on Loan to Aghada Loan Fund,	1 10 10
In payment of third instalment of Aghada Loan,	10 0 0
	£995 16 3

The Board's Expenditure in 1860 was £933 3*s.* 5*d.*; it exceeded that of 1859 by the sum of £21 13*s.* 3*d.*

The excess of Income of 1860, from all sources, over the Expenditure in that year was £62 12*s.* 10*d.*

In preceding Reports, the Board have expressed their opinion that some improvement in the present machinery of the local management of Loan Funds, and in the existing legislative control over the Institution, was required, with a view to the more adequate protection of the savings of the industrious poor, and the promotion of the main objects of the Institution, and are still of opinion the necessity for such improvement exists.

5th April, 1861.

(Signed)

George H. Lindsay, *Chairman.*
Clancarty.
Talbot De Malahide.
James Power, Bart.
William H. Cogan.
John Gray Porter.
John Lentaigne.
De Vesci.
Belmore.
Erne.
John Ennis.
G. G. Ouseley Higgins.
W. Pollard Urquhart.

(Countersigned)

R. R. Madden, *Secretary.*

APPENDIX

SYNOPTICAL TABLE, exhibiting the Operations of the

COUNTIES.	Number of Societies Reporting in 1860.	Amount of Capital to be Accounted for on 31st December, 1860.	Actual Amount of Capital Working on 31st December, 1860.	Total Amount Circulated in 1860.	Number of Loans issued in 1860.	Sum in Borrowers' hands, on 31st December, 1860, exclusive of Bad Debts.	Sum in Treasurers' hands, on 31st December, 1860.	Amount of Discount received in 1860.	Amount of Fines received in 1860.
		£	£	£		£ s. d.	£ s. d.	£ s. d.	£ s. d.
Antrim, .	1	7,102	7,078	26,312	4,241	6,912 4 0	189 15 6	438 10 8	83 1 1
Armagh, .	1	403	—	19,129	3,580	—	403 7 11	318 16 4	29 13 11
Carlow, .	—	—	—	—	—	—	—	—	—
Cavan, . .	1	4,575	4,561	17,248	3,130	4,561 12 0	2 12 1	287 9 4	34 6 11
Clare, . .	1	925	923	3,923	1,125	873 5 0	50 7 4	96 19 5	6 6 11
Cork, . .	11	9,481	9,447	40,860	12,740	8,663 17 0	771 5 10	773 14 4	314 10 10
Donegal, .	7	19,342	18,589	73,188	15,337	18,621 3 0	694 14 5	1,480 18 11	460 9 3
Down, . .	1	6,107	6,106	27,667	3,158	5,947 14 0	158 7 7	461 2 4	51 10 11
Dublin, . .	3	4,960	4,830	14,953	2,518	4,129 8 6	830 9 9	436 2 11	127 19 6
Fermanagh, .	7	16,225	15,905	58,885	9,912	14,484 3 0	1,734 3 1	1,339 14 11	484 5 8
Galway, .	2	3,126	3,107	12,677	2,705	2,612 13 0	511 8 0	226 19 6	32 5 10
Kerry, . .	—	—	—	—	—	—	—	—	—
Kildare, .	2	3,244	3,234	13,474	3,084	3,034 4 0	207 14 7	365 18 5	111 19 7
Kilkenny, .	4	1,569	1,564	6,770	2,552	1,548 18 0	19 16 4	112 16 8	55 0 4
King's, . .	2	2,811	2,804	10,328	3,347	2,629 8 0	176 7 2	199 1 6	138 9 10
Leitrim, .	2	5,830	5,776	22,354	4,438	5,729 12 0	100 11 8	558 17 0	72 8 7
Limerick, .	5	6,271	6,127	28,494	6,106	5,816 13 0	449 12 10	512 10 5	118 18 6
Londonderry,	4	12,377	12,235	51,048	10,882	11,939 15 0	409 9 4	1,118 18 2	298 10 9
Longford, .	3	6,252	6,199	21,533	4,599	6,135 2 0	110 19 11	629 6 11	121 16 6
Louth, . .	—	—	—	—	—	—	—	—	—
Mayo, . .	3	2,170	2,151	8,250	2,011	1,861 12 0	289 19 1	137 10 0	61 15 9
Meath, . .	1	1,500	1,493	7,193	1,662	1,497 18 0	—	119 17 8	23 6 7
Monaghan, .	2	4,044	4,013	19,668	5,250	4,028 18 0	8 9 11	328 2 8	78 8 4
Queen's, .	7	13,534	13,402	56,170	15,128	12,584 16 5	937 19 1	1,015 9 2	534 6 7
Roscommon, .	1	6,101	6,020	22,966	4,393	5,595 3 0	504 14 9	526 6 2	102 6 4
Sligo, . .	4	7,060	6,974	31,191	7,374	6,114 16 0	940 13 7	609 4 10	143 0 3
Tipperary, .	6	17,298	16,997	67,014	18,818	14,954 2 0	2,325 19 8	1,419 6 2	510 11 11
Tyrone, .	17	49,406	47,756	184,456	32,911	47,045 6 0	1,979 14 11	4,283 8 2	989 11 0
Waterford, .	2	3,688	3,640	17,253	4,003	3,516 13 0	154 8 1	287 11 0	73 0 11
Westmeath, .	3	4,176	4,167	17,511	4,665	3,964 16 0	207 4 11	414 8 3	99 7 8
Wexford, .	3	7,377	6,709	25,942	6,109	6,992 7 0	375 1 4	553 3 2	322 5 8
Wicklow, .	4	3,055	3,050	11,280	2,577	2,484 6 0	567 2 3	311 12 9	70 13 11
Totals, .	110	230,009	224,857	917,737	198,355	214,280 4 11	15,112 10 11	19,363 17 9	5,550 9 10

(A) No. 1.

Loan Fund System during the Year 1860.

Gross Profit, being the Total Amount received for Discount, Fines, and Cards or Application Papers, in 1860.	Total Paid as Salaries or Wages during 1860.	Number of Paid Servants employed.	Total Expenses of Management, including Salaries or Wages, and Loss on Notes, during 1860.	Amount of Interest paid for Capital.	Number of Depositors owning said Capital.	Net Loss of 1860, after Payment of Interest and all Expenses, and deducting any Bad Debts.	Net Profit of 1860, after Payment of Interest and all Expenses, and deducting any Bad Debts.	Amount of Bad Debts charged to Stock in 1860.	Amount actually expended for Charitable or useful Local Purposes in 1860.
£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.	£ s. d.
579 18 7	222 0 0	3	272 16 4	124 12 6	25	—	182 9 9	—	60 0 0
391 11 1	181 0 0	4	230 0 6	209 6 0	—	47 15 5	—	—	—
—	—	—	—	—	—	—	—	—	—
347 17 11	94 6 0	4	119 11 1	158 15 10	16	—	69 11 0	—	10 0 0
112 13 10	53 0 0	2	74 13 1	37 7 6	9	—	0 13 3	—	—
1,193 4 10	425 17 0	22	595 7 5	257 9 3	113	—	341 3 8	—	—
2,028 12 5	662 9 3	21	888 17 6	732 6 1	288	—	380 8 5	25 12 0	100 0 0
547 2 10	134 12 0	3	182 6 7	246 8 11	70	—	118 7 4	—	77 10 0
609 10 0	149 10 0	6	249 15 11	87 17 6	45	—	257 15 9	14 0 0	—
1,894 19 7	470 14 9	20	665 11 11	510 14 6	110	—	695 16 1	20 16 0	338 0 0
290 2 4	134 3 8	3	159 2 4	84 11 0	8	—	46 9 0	—	—
—	—	—	—	—	—	—	—	—	—
506 11 9	159 2 0	9	270 2 2	124 10 11	34	—	104 8 8	7 10 0	83 13 0
188 6 8	81 0 0	7	110 14 6	41 13 9	12	—	35 18 4	—	13 10 8
359 0 7	155 7 8	7	212 19 3	34 18 5	19	—	110 10 11	0 12 0	50 0 0
643 5 6	147 0 0	5	232 17 4	178 6 3	30	—	217 9 11	14 12 0	130 19 0
714 14 5	319 4 0	13	408 15 9	98 3 6	46	—	207 15 2	—	50 0 0
1,519 1 9	487 4 0	13	624 9 11	445 15 0	136	—	442 16 9	—	165 10 0
792 0 8	199 0 0	9	257 0 0	277 4 7	87	—	258 0 1	—	45 2 0
—	—	—	—	—	—	—	—	—	—
216 0 11	103 0 0	3	106 19 11	106 0 0	7	—	5 7 6	—	—
157 14 7	60 0 0	3	68 11 0	72 8 1	12	—	16 15 6	—	—
450 12 8	125 0 0	5	163 10 6	181 0 1	36	—	106 2 1	—	10 0 0
1,768 19 7	654 12 0	19	1,003 11 10	484 10 11	104	82 14 5	293 0 11	15 6 0	123 4 8
665 4 8	271 16 4	6	346 11 6	211 15 9	63	—	86 17 5	20 0 0	—
816 2 3	273 0 0	11	352 18 6	316 19 0	59	19 14 6	111 0 4	54 19 0	53 3 2
2,123 0 9	744 11 10	20	992 2 5	520 17 3	165	—	610 1 2	—	287 0 0
5,565 0 10	1,803 11 4	57	2,488 4 1	2,126 19 4	407	66 10 10	1,105 8 1	74 2 0	1,284 17 9
399 2 4	156 0 0	4	205 3 0	151 6 5	30	—	38 12 11	4 0 0	25 0 0
569 17 8	222 0 0	8	272 3 11	159 5 4	70	—	138 8 4	—	5 0 0
923 1 1	308 10 0	9	433 13 9	213 3 2	61	—	276 4 2	47 8 0	334 10 9
403 15 1	148 10 0	11	197 16 5	100 12 8	81	—	105 6 6	—	53 7 0
26,777 7 2	8,946 1 10	307	12,186 8 5	8,294 19 6	2,143	216 15 2	6,362 19 0	298 17 0	3,300 8 0

APPENDIX

STATEMENT of ACCOUNTS of LOAN FUNDS for the Year ending

The Funds, the Names of which are printed in *Italics*, have ceased to operate during the year 1860, or have been

COUNTY AND NAME OF LOAN FUND.	Amount of Capital to be accounted for on 31st Dec. 1860.	Of which is held free of Interest, being Original subscription or Unappropriated Profits.	Actual Amount of Capital working on 31st Dec. 1860.	Total Amount Circulated in 1860.	Amount issued in Monthly Loans.	Number of Loans issued in 1860.	Average Amount of each Loan.	Average Cost of the Issue of each Loan in 1860, exclusive of Interest on the Capital.	Sum in Borrowers' hands on 31st Dec., 1860, exclusive of Bad Debts.	Sum in Treasurers' hands on 31st Dec., 1860.	Amount of Discount received in 1860.	Amount of Fines received in 1860.
ANTRIM.	£	£	£	£	£		£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Antrim,	7,102	4,618	7,078	26,312	26,163	4,241	6 4 0	1 3	6,912 4 0	189 15 6	438 10 8	83 1 1
ARMAGH.												
Portadown (New),	403	403	–	19,129	–	3,580	5 6 0	1 3	–	403 7 11	318 16 4	29 13 11
CAVAN.												
Ballyjamesduff,	4,575	944	4,561	17,248	17,248	3,130	5 10 0	0 9	4,561 12 0	2 12 1	287 9 4	34 6 11
CLARE.												
Miltown Malbay,	925	145	923	3,923	2,166	1,125	3 9 0	1 3	873 5 0	50 7 4	96 19 5	6 6 11
CORK.												
Aghada,	295	228	294	1,195	–	926	1 5 0	0 4	264 5 0	30 12 1	19 18 4	12 9 4
Ballyclough,	769	213	748	3,144	1,826	1,104	2 16 0	0 11	736 0 0	29 6 0	67 12 4	17 19 8
Bandon,	300	–	264	995	–	494	2 0 0	1 0	192 14 0	71 8 4	16 11 8	4 15 4
Cork Charitable (New)	1,327	147	1,287	5,157	–	1,655	3 2 0	1 6	1,267 11 0	58 11 8	85 19 0	98 3 5
Doneraile (New),	1,035	65	1,131	4,962	1,567	1,671	3 0 0	0 8	1,024 15 0	9 1 5	105 11 0	20 7 6
Fermoy,	1,470	200	1,463	7,353	1,582	1,798	4 1 0	0 10	1,401 14 0	67 2 5	145 12 5	7 1 4
Kanturk,	1,297	102	1,289	5,439	2,213	1,675	3 5 0	0 6	1,213 17 0	81 11 4	122 4 7	57 17 10
Kinsale,	864	194	855	3,027	–	829	3 13 0	2 0	565 19 0	296 19 7	50 9 0	46 19 2
Knockmourne (New)	243	32	242	1,116	–	396	2 17 0	0 3	220 3 0	22 13 10	18 12 0	6 8 1
Newmarket,	452	52	445	1,556	–	460	3 8 0	1 4	350 15 0	101 3 9	25 18 8	16 2 10
Queenstown,	1,429	471	1,429	6,916	–	1,732	4 0 0	0 9	1,426 4 0	2 15 5	115 5 4	26 6 4
	9,481	1,704	9,447	40,860	7,188	12,740	–	–	8,663 17 0	771 5 10	773 14 4	314 10 10
DONEGAL.												
Ballintra,	1,936	801	1,934	7,113	4,797	1,601	4 8 0	1 5	1,928 16 0	6 1 10	178 10 3	27 5 11
Buncrana,	3,241	185	2,685	11,695	6,167	2,189	5 7 0	1 5	[2,893 11 0	345 1 6	246 7 2	131 19 11
Carndonagh,	4,000	515	3,916	14,585	10,746	2,458	6 0 0	1 1	3,999 5 0	–	290 16 8	93 17 8
Culdaff,	3,259	484	3,200	11,512	9,418	2,171	5 6 0	0 11	3,219 17 0	35 18 6	222 7 8	70 18 6
Letterkenny,	2,190	1,289	2,183	9,505	–	1,994	4 15 0	0 11	2,084 2 0	100 5 9	158 8 4	56 10 3
Moville,	2,709	1,267	2,668	10,207	8,577	2,331	4 7 0	1 1	2,636 0 0	62 15 0	241 11 10	46 16 8
Raphoe,	2,007	966	2,003	8,571	–	1,593	5 8 0	1 2	1,859 12 0	144 11 10	142 17 0	33 0 4
	19,342	5,507	18,589	73,188	39,705	14,357	–	–	18,621 3 0	694 14 5	1,480 18 11	460 9 3
DOWN.												
Hollywood,	6,107	1,000	6,106	27,667	–	3,158	8 15 0	1 1	5,947 14 0	158 7 7	461 2 4	51 10 11
DUBLIN.												
Dublin, S. Eastn.	2,670	54	2,669	9,931	8,670	1,422	7 0 0	1 11	2,667 8 0	2 1 3	291 19 1	87 10 5
Johnstone Charitable,	405	130	405	874	–	143	6 2 0	1 8	216 4 6	189 3 3	14 11 4	0 6 11
Lucan,	1,885	93	1,756	4,148	4,148	953	4 7 0	2 0	1,245 16 0	639 5 3	129 12 6	40 2 2
	4,960	277	4,830	14,953	12,818	2,518	–	–	4,129 8 6	830 9 9	436 2 11	127 19 6
FERMANAGH.												
Crichton,	6,764	4,083	6,744	26,126	24,516	4,481	5 16 0	1 3	6,421 6 0	340 5 2	639 14 8	173 4 6
Enniskillen,	1,464	182	1,440	5,214	2,904	921	5 13 0	2 4	1,367 15 0	94 7 0	129 5 0	60 19 9
Kesh,	3,366	773	3,365	12,682	–	1,958	6 1 0	0 11	3,103 4 0	262 2 4	211 7 4	94 6 8
Lack,	2,140	810	1,911	7,408	5,094	1,054	7 0 0	2 3	1,829 17 0	308 3 11	197 15 1	86 14 10
Lisbellaw,	1,180	130	1,163	2,564	2,564	464	5 10 0	2 1	741 9 0	438 11 3	80 2 6	23 2 9
Lowtherstown,	–	–	–	–	–	–	–	–	–	–	–	–
Tempo,	1,311	571	1,282	4,891	–	1,034	4 14 0	1 2	1,020 12 0	290 13 5	81 10 4	45 17 2
	16,225	6,549	15,905	58,885	35,078	9,912	–	–	14,484 3 0	1,734 3 1	1,339 14 11	484 5 8
GALWAY.												
Ballinasloe,	2,425	434	2,422	11,601	–	2,371	5 0 0	1 2	2,334 5 0	88 13 7	193 7 0	29 18 0
Loughrea (New),	701	701	685	1,076	1,076	334	3 4 0	1 0	278 8 0	422 14 5	33 12 6	2 7 10
	3,126	1,135	3,107	12,677	1,076	2,705	–	–	2,612 13 0	511 8 0	226 19 6	32 5 10

(A) No. 2.

31st December, 1860, as rendered to the Loan Fund Board.

wound up; those printed in Capitals have been closed by order of the Board on account of Irregularities in the Management.

Gross Profit, being the Total Amount received for Discount, Fines, and Cards, or Application Papers, in 1860.	Total Paid as Salaries or Wages during 1860.	Number of Paid Servants employed.	Total Expenses of Management, including Salaries or Wages, and Loss on Notes in 1860.	Amount of Interest paid for Capital.	Number of Depositors owning said Capital.	Net Loss of 1860 (if any) after payment of Interest and all Expenses, and deducting any Bad Debts.	Net Profit of 1860 (if any) after payment of Interest and all Expenses, and deducting any Bad Debts.	Amount of Bad Debts charged to Stock in 1860.	Amount actually Expended for Charitable Purposes in 1860.	Honorary Officers: Treasurers.
£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	
579 18 7	222 0 0	3	272 16 4	124 12 6	25	–	182 9 9	–	60 0 0	Rev. James Carley.
391 11 1	181 0 0	4	230 0 6	209 6 0	–	47 15 5	–	–	–	Averel Shillington, Esq.
347 17 11	94 6 0	4	119 11 1	158 15 10	16	–	69 11 0	–	10 0 0	Robt. J. Cuming, Esq., J.P.
112 13 10	53 0 0	2	74 13 1	37 7 6	9	–	0 13 3	–	–	Fras. Moroney, Esq., J.P.
40 13 7	10 13 0	2	18 14 3	1 10 0	1	–	20 8 6	–	–	Rev. Francis Shortt.
90 4 0	34 17 6	3	54 9 3	28 15 8	16	–	6 19 1	–	–	R. Longfield, Esq., D.L.
25 9 4	20 0 0	1	25 16 10	–	2	–	0 8 0	–	–	Mr. Thomas Bennett.
214 13 9	86 0 0	2	125 15 9	–	–	–	88 18 0	–	–	George J. Wycherly, M.D.
139 17 0	48 12 6	3	59 13 0	48 12 0	7	–	31 12 0	–	–	Mr. William Murphy.
160 7 10	52 13 0	2	75 9 0	61 6 7	24	–	23 12 3	–	–	Miss C. Briscoe.
195 8 5	37 16 0	2	47 1 3	59 15 9	21	–	88 11 5	–	–	VeryRev. P. D. O'Regan, P.P.
103 7 11	50 0 0	3	85 2 0	–	–	–	18 5 11	–	–	Achilles Daunt, Esq.
28 6 1	5 0 0	1	5 14 3	10 19 11	11	–	11 11 11	–	–	Rev. R. D. Campion.
45 19 3	25 0 0	1	31 5 10	–	–	–	14 13 5	–	–	George Smith, Esq.
148 17 8	55 5 0	2	66 6 0	46 8 6	31	–	36 3 2	–	–	David Paterson, Esq.
1,193 4 10	425 17 0	22	595 7 5	257 8 5	113	–	341 3 8	–	–	
216 12 3	75 18 9	3	115 0 11	56 15 0	21	–	23 4 4	21 12 0	–	William Thompson, Esq.
400 1 11	128 2 6	5	160 0 6	176 5 10	55	–	63 15 7	–	–	Rev. David Mitchell.
401 1 7	104 0 0	3	143 5 6	202 10 1	80	–	55 6 0	–	–	John Doherty, Esq.
298 18 8	100 8 0	3	134 3 7	135 17 1	34	–	24 18 0	4 0 0	–	Rev. John Canning.
224 13 1	75 0 0	2	94 15 8	34 7 11	20	–	94 1 2	–	100 0 0	J. R. Boyde, Esq., D.L.
303 6 8	95 0 0	2	143 15 0	83 5 9	26	–	76 5 11	–	–	Wm. Haslett, Esq., J.P.
183 18 3	84 0 0	3	97 16 4	43 4 5	52	–	42 17 5	–	–	Wm. Fenwick, Esq., J.P.
2,028 12 5	662 9 3	21	888 17 6	732 6 1	288	–	380 8 5	25 12 0	100 0 0	
547 2 10	134 12 0	3	182 6 7	246 8 11	70	–	118 7 4	–	77 10 0	James Jackson, Esq.
403 11 8	99 0 0	2	140 5 10	–	33	–	249 5 0	14 0 0	–	M. Hewson, Esq., R.N.
19 3 2	10 0 0	1	12 4 9	–	–	–	6 18 5	–	–	J. C. Lowry, Esq.
186 15 2	40 10 0	3	97 5 4	87 17 6	12	–	1 12 4	–	–	Mr. Edward Coley.
609 10 0	149 10 0	6	249 15 11	87 17 6	45	–	257 15 9	14 0 0	–	
860 11 6	158 0 0	8	230 1 9	132 4 1	25	–	498 5 8	–	303 0 0	Mr. Hugh Armstrong.
198 10 11	90 0 0	2	110 8 4	67 13 7	19	–	18 7 11	–	10 0 0	M. H. Morphy, Esq.
305 14 0	65 0 0	3	90 17 11	132 12 5	25	–	70 3 8	12 0 0	25 0 0	Wm. Archdall, Esq., J.P.
293 5 7	82 14 9	2	121 14 10	81 9 5	26	–	90 1 4	–	–	Edward Athill, Esq., J.P.
105 3 11	35 0 0	2	50 3 11	52 5 0	8	–	2 15 0	–	–	Rev. J. G. Porter, J.P.
–	–	–	–	–	–	–	–	–	–	H. M. I. D'Arcy, Esq., J.P.
131 13 8	45 0 0	3	62 5 2	44 10 0	7	–	16 2 6	8 16 0	–	Mr. John Gibson.
1,894 19 7	470 14 9	20	665 11 11	510 14 6	110	–	695 16 1	20 16 0	338 0 0	
246 7 5	122 3 8	2	141 5 3	84 11 0	8	–	20 11 2	–	–	T. Lancaster, Esq., J.P.
43 14 11	12 0 0	1	17 17 1	–	–	–	25 17 10	–	–	Rev. Mr. Macklin, P.P.
290 2 4	134 3 8	3	159 2 4	84 11 0	8	–	46 9 0	–	–	

APPENDIX (A) No. 2.—Statement of Accounts of Loan Funds for the Year

COUNTY AND NAME OF LOAN FUND.	Amount of Capital to be accounted for on 31st Dec. 1860.	Of which is held free of Interest, being Original subscription or Unappropriated Profits.	Actual Amount of Capital working on 31st Dec. 1860.	Total Amount Circulated in 1860.	Amount issued in Monthly Loans.	Number of Loans issued in 1860.	Average Amount of each Loan.	Average Cost of the Issue of each Loan, exclusive of Interest on the Capital.	Sum in Borrowers' hands on 31st Dec., 1860, exclusive of Bad Debts.	Sum in Treasurers' hands on 31st Dec., 1860	Amount of Discount received in 1860.	Amount of Fines received in 1860.
KILDARE.	£	£	£	£	£		£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Athy,	2,339	739	2,330	9,808	6,945	2,362	4 3 0	1 8	2,195 0 0	142 10 7	264 14 11	95 14 7
Fontstown,	905	104	904	3,666	2,748	722	5 1 0	1 10	839 4 0	65 4 0	101 3 6	16 5 0
	3,244	843	3,234	13,474	9,693	3,084	–	–	3,034 4 0	207 14 7	365 18 5	111 19 7
KILKENNY.												
Callan, No. 1,	583	263	582	2,848	–	935	3 0 0	1 0	570 3 0	11 19 11	47 9 4	25 2 9
Fiddown,	131	47	131	628	–	295	2 2 0	1 0	130 12 0	0 14 10	10 9 4	8 18 6
Stoneyford,	400	25	396	1,757	–	731	2 5 0	0 10	393 17 0	6 6 3	29 5 8	7 9 6
Thomastown,	455	287	455	1,537	–	591	2 12 0	0 9	454 6 0	0 15 4	25 12 4	13 9 7
	1,569	622	1,564	6,770	–	2,552	–	–	1,548 18 0	19 16 4	112 16 8	55 0 4
KING'S CO.												
Clara,	1,575	950	1,571	5,868	3,233	1,758	3 6 0	1 2	1,399 9 0	172 19 8	124 14 10	53 15 4
Tullamore,	1,236	136	1,233	4,460	–	1,589	2 16 0	1 3	1,229 19 0	3 7 6	74 6 8	84 14 6
	2,811	1,086	2,804	10,328	3,233	3,347	–	–	2,629 8 0	176 7 2	199 1 6	138 9 10
LEITRIM.												
Annaduff,	1,363	494	1,315	5 103	5,106	1,438	3 11 0	0 11	1,356 8 0	7 0 9	127 13 0	9 7 9
Cloone,	4,467	1,934	4,461	17,248	17,248	3,000	5 14 0	1 1	4,373 4 0	93 10 11	431 4 0	63 0 10
	5,830	2,428	5,776	22,354	22,354	4,438	–	–	5,729 12 0	100 11 8	558 17 0	72 8 7
LIMERICK.												
Askeaton,	869	220	815	3,987	1,026	1,003	3 19 0	0 7	867 18 0	0 2 1	66 9 0	33 8 5
Ballingarry,	650	100	621	3,181	–	791	4 0 0	1 2	590 14 0	57 7 7	53 0 4	20 19 1
Galbally,	1,172	811	1,146	5,429	2,582	1,216	4 9 0	0 10	1,057 4 0	114 6 1	128 2 9	3 0 0
Limerick Industrial,	1,725	1,220	1,710	8,429	–	1,572	5 0 0	1 9	1,709 1 0	15 10 10	140 9 0	32 13 9
Limerick Pery and Jubilee,	1,855	1,855	1,835	7,468	–	1,524	4 18 0	1 7	1,591 16 0	262 6 3	124 9 4	28 17 3
	6,271	4,206	6,127	28,494	3,608	6,106	–	–	5,816 13 0	449 12 10	512 10 5	118 18 6
LONDONDERRY.												
Draperstown,	1,874	145	1,818	8,857	6,223	1,692	5 5 0	1 2	1,869 18 0	–	238 6 4	45 18 4
Kilrea,	3,489	605	3,465	11,653	10,793	2,068	5 12 0	1 6	3,233 14 0	247 3 4	280 11 6	64 12 6
Londonderry,	6,079	1,979	6,039	26,624	10,926	6,100	4 7 0	1 0	5,942 8 0	127 2 11	534 15 8	158 1 6
Maghera,	935	10	913	3,914	–	1,022	3 16 0	1 0	893 15 0	35 3 1	65 4 8	29 18 5
	12,377	2,739	12,235	51,048	27,942	10,882	–	–	11,939 15 0	409 9 4	1118 18 2	298 10 9
LONGFORD.												
Abbeyshrule,	1,759	354	1,758	5,872	5,516	1,104	5 6 0	1 2	1,667 14 0	91 3 11	178 6 2	61 15 8
Edgeworthstown,	1,907	323	1,902	7,471	4,840	1,430	5 4 0	1 1	1,883 0 0	19 16 0	195 2 0	6 14 8
Shrule,	2,586	512	2,539	8,190	8,190	2,065	3 19 0	1 0	2,584 8 0	–	255 18 9	53 6 2
	6,252	1,189	6,199	21,533	18,546	4,599	–	–	6,135 2 0	110 19 11	629 6 11	121 16 6
MAYO.												
Foxford,	16	2	–	–	–	–	–	–	–	–	–	2 13 6
Kiltimagh,	1,000	–	998	3,203	–	732	4 7 0	0 3	707 16 0	289 19 1	53 7 8	3 17 10
Swineford,	1,154	–	1,153	5,047	–	1,279	3 19 0	1 6	1,153 16 0	–	84 2 4	55 4 5
	2,170	2	2,151	8,250	–	2,011	–	–	1,861 12 0	289 19 1	137 10 0	61 15 9
MEATH.												
Kells,	1,500	43	1,493	7,193	–	1,662	4 6 0	0 9	1,497 18 0	–	119 17 8	23 6 7
MONAGHAN.												
Cornasoo,	1,192	134	1,186	6,344	–	2,120	3 0 0	0 7	1,180 17 0	8 9 11	105 14 8	15 4 6
Raw,	2,852	458	2,827	13,344	–	3,130	4 5 0	0 6	2,848 1 0	–	222 8 0	63 3 10
	4,044	592	4,013	19,688	–	5,250	–	–	4,028 18 0	8 9 11	328 2 8	78 8 4
QUEEN'S CO.												
Abbeyleix,	1,736	477	1,722	7,567	588	2,141	3 10 0	2 5	1,734 17 0	–	131 0 4	29 17 10
Crettyard,	1,755	255	1,742	6,775	–	1,413	4 15 0	1 3	1,356 5 0	397 7 3	112 18 4	116 19 11
Durrow,	2,821	860	2,757	10,428	8,927	2,285	4 11 0	1 10	2,776 15 0	40 15 9	248 3 10	105 11 2
Maryborough,	2,327	227	2,316	10,123	–	2,988	3 7 0	0 11	2,141 11 0	183 16 7	168 14 4	101 13 3
Mountrath,	2,500	500	2,488	11,553	–	3,031	3 16 0	0 10	2,463 3 0	33 14 1	192 11 0	33 19 11
Portarlington,	1,283	113	1,282	4,818	–	1,893	2 10 0	0 10	1,000 0 0	282 5 5	80 6 0	59 9 3
Timahoe,	1,112	108	1,095	4,906	–	1,377	3 11 0	1 1	1,112 5 5	–	81 15 4	86 15 3
	13,534	2,540	13,402	56,170	9,515	15,128	–	–	12,584 16 5	937 19 1	1015 9 2	534 6 7

ending 31st December, 1860, as rendered to the Loan Fund Board—*continued.*

Gross Profit, being the Total Amount received for Discount, Fines, and Cards, or Application Papers, in 1860.	Total Paid as Salaries or Wages during 1860.	Number of Paid Servants employed.	Total Expenses of Management, including Salaries or Wages, and Loss on Notes in 1860.	Amount of Interest paid for Capital.	Number of Depositors owning said Capital.	Net Loss of 1860 (if any) after payment of Interest and all Expenses, and deducting any Bad Debts.	Net Profit of 1860 (if any) after payment of Interest and all Expenses, and deducting any Bad Debts.	Amount of Bad Debts charged to Stock in 1860.	Amount actually Expended for Charitable Purposes in 1860.	Honorary Officers: Treasurers.
£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	
381 9 10	117 2 0	5	202 2 2	94 9 3	13	–	77 8 5	7 10 0	78 3 0	Henry Hannon, Esq.
125 1 11	42 0 0	4	68 0 0	30 1 8	21	–	27 0 3	–	5 10 0	Rev. Richard W. Bagot.
506 11 9	159 2 0	9	270 2 2	124 10 11	34	–	104 8 8	7 10 0	83 13 0	
76 10 0	40 0 0	2	48 16 11	17 6 3	4	–	10 6 10	–	3 3 0	Rev. C. B. Stevenson.
20 12 5	14 0 0	1	14 19 7	–	–	–	5 12 10	–	–	Rev. W. Gregory.
46 17 4	7 10 0	2	22 15 5	17 16 3	7	–	6 5 8	–	–	Mrs. Sarah Flood.
44 6 11	19 10 0	2	24 2 7	6 11 3	1	–	13 13 0	–	10 7 8	Ven. Archdn. Thacker.
188 6 8	81 0 0	7	110 14 6	41 13 9	12	–	35 18 4	–	13 10 8	
193 3 2	79 7 8	3	103 7 8	34 18 5	19	–	49 17 1	–	–	Henry R. Perry, Esq.
165 17 5	76 0 0	4	101 11 7	–	–	–	60 13 10	0 12 0	50 0 0	Alex. M'Mullen, Esq.
359 0 7	155 7 8	7	212 19 3	34 18 5	19	–	110 10 11	0 12 0	50 0 0	
149 0 5	50 0 0	2	66 2 11	45 18 0	17	–	35 7 6	1 12 0	60 19 0	Mr. James Reynolds.
494 5 1	97 0 0	3	166 14 5	132 8 3	13	–	182 2 5	13 0 0	70 0 0	Henry Huston, Esq.
643 5 6	147 0 0	5	232 17 4	178 6 3	30	–	217 9 11	14 12 0	130 19 0	
108 4 7	24 0 0	2	31 7 0	35 9 8	18	–	41 7 11	–	–	Rev. G. Maxwell.
84 15 5	37 10 0	2	47 16 7	30 18 11	4	–	5 19 11	–	50 0 0	Rev. G. G. Gubbins.
136 4 1	40 0 0	3	54 7 9	12 2 10	16	–	69 13 6	–	–	R. D. Bolton Massy, Esq.
216 11 0	127 14 0	3	150 6 1	19 12 1	8	–	46 12 10	–	–	Very Rev. Dean Butler.
168 19 4	90 0 0	3	124 18 4	–	–	–	44 1 0	–	–	Edward Fitt, Esq.
714 14 5	319 4 0	13	408 15 9	98 3 6	46	–	207 15 2	–	50 0 0	
298 10 7	80 0 0	3	101 13 0	86 2 4	25	–	110 15 3	–	–	Mr. James Kerr.
371 13 8	125 0 0	3	157 5 0	108 16 2	42	–	99 12 5	–	115 10 0	R. H. Dolling, Esq., J.P.
743 11 8	252 4 0	5	316 4 7	205 0 0	61	–	222 7 1	–	50 0 0	James Gilmore, Esq.
105 5 10	30 0 0	2	49 7 4	45 16 6	8	–	10 2 0	–	–	Mr. James Kerr.
1,519 1 9	487 4 0	13	624 9 11	445 15 0	136	–	442 16 9	–	165 10 0	
249 5 11	57 0 0	3	66 14 2	70 19 9	17	–	111 12 0	–	20 2 0	William Shaw, Esq.
216 5 8	67 0 0	4	83 0 4	81 16 10	39	–	51 12 6	–	25 0 0	Rev. J. H. J. Powell.
326 9 1	75 0 0	2	107 5 6	124 8 0	31	–	94 15 7	–	–	Thomas Maxwell, Esq.
792 0 8	199 0 0	9	257 0 0	277 4 7	87	–	258 0 1	–	45 2 0	
2 13 6	–	–	–	–	–	–	2 13 6	–	–	Rev. P. J. O'Connor, P.P.
63 7 6	10 0 0	1	10 16 9	51 0 0	4	–	1 10 9	–	–	Edmund Jordan, Esq.
149 19 11	93 0 0	2	96 3 2	55 0 0	3	–	1 3 3	–	–	H. Brabazon, Esq.
216 0 11	103 0 0	3	106 19 11	106 0 0	7	–	5 7 6	–	–	
157 14 7	60 0 0	3	68 11 0	72 8 1	12	–	16 15 6	–	–	Robert Woodward, Esq.
138 19 2	55 0 0	2	69 0 0	55 10 0	9	–	14 9 2	–	–	Samuel Jameson, Esq.
311 13 6	70 0 0	3	94 10 6	125 10 1	27	–	91 12 11	–	10 0 0	Doctor J. Moorehead.
450 12 8	125 0 0	5	163 10 6	181 0 1	36	–	106 2 1	–	10 0 0	
233 3 7	140 0 0	2	258 0 10	57 17 2	9	82 14 5	–	–	3 7 8	E. L. Swan, Esq.
242 11 10	60 0 0	2	92 1 8	75 0 0	11	–	75 10 2	–	0 10 0	John Edge, Esq.
372 13 6	140 0 0	3	218 6 8	45 10 11	25	–	53 12 7	4 18 0	79 7 0	Robert Rhodes, Esq.
307 9 11	99 0 0	4	137 13 8	104 13 11	23	–	54 14 4	10 8 0	30 0 0	Thomas Turpin, Esq.
257 11 8	95 0 0	2	133 8 1	97 0 7	18	–	27 3 0	–	–	William Roe, Esq.
157 3 0	70 12 0	4	82 12 4	58 10 0	10	–	16 0 8	–	10 0 0	Very Rev. J. Wolseley.
198 6 1	50 0 0	2	80 8 7	45 18 4	8	–	66 0 2	–	–	William Edge, Esq.
1,768 19 7	654 12 0	19	1002 11 10	484 10 11	104	82 14 5	293 0 11	15 6 0	123 4 8	

APPENDIX (A) No. 2.—Statement of Accounts of Loan Funds for the Year

County and Name of Loan Fund.	Amount of Capital to be accounted for on 31st Dec. 1860.	Of which is held free of Interest, being Original Subscription or Unappropriated Profits.	Actual Amount of Capital working on 31st Dec. 1860.	Total Amount Circulated in 1860.	Amount issued in Monthly Loans.	Number of Loans issued in 1860.	Average Amount of each Loan.	Average Cost of the Issue of each Loan, exclusive of Interest on the Capital.	Sum in Borrowers' hands on 31st Dec., 1860, exclusive of Bad Debts.	Sum in Treasurers' hands on 31st Dec., 1860.	Amount of Discount received in 1860.	Amount of Fines received in 1860.
Roscommon.	£	£	£	£	£		£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Athlone,	6,101	1,896	6,020	22,066	17,225	4,393	5 4 0	1 7	5,595 3 0	504 14 9	526 6 2	102 6 4
Sligo.												
Bellaghy,	2,011	335	1,981	10,095	–	2,469	4 1 0	0 7	1,911 11 0	97 7 6	168 5 0	55 8 1
Drumcliff,	926	339	920	4,111	3,343	883	4 13 0	0 8	828 7 0	97 19 5	117 5 4	22 8 7
Sligo,	1,691	116	1,643	7,612	2,787	1,577	4 16 0	1 5	1,445 15 0	243 13 4	167 10 2	48 16 11
Tubbercurry,	2,432	547	2,430	9,373	–	2,445	3 16 0	0 8	1,929 3 0	501 13 4	156 4 4	16 6 8
	7,060	1,337	6,974	31,191	6,130	7,374	–	–	6,114 16 0	940 13 7	609 4 10	143 0 3
Tipperary.												
Cahir,	2,118	140	2,114	6,289	–	1,776	3 10 0	0 8	1,161 2 0	953 17 11	104 16 4	2 0 8
Cashel,	2,524	1,474	2,518	10,763	4,066	4,110	2 12 0	1 0	2,323 4 0	195 9 10	213 5 4	52 15 1
Fethard,	1,083	299	1,065	4,864	–	1,985	2 9 0	0 7	902 1 0	180 6 8	81 1 4	57 9 6
Nenagh,	6,097	1,636	5,914	21,276	14,836	4,903	4 6 0	1 2	5,541 16 0	552 2 3	540 1 0	176 15 10
Roscrea,	3,394	1,564	3,375	13,060	9,969	3,210	4 1 0	1 5	3,083 3 0	308 10 10	300 14 10	110 18 9
Tipperary,	2,082	329	2,011	10,762	–	2,834	3 16 0	0 10	1,942 16 0	135 12 2	179 7 4	110 12 1
	17,298	5,442	16,997	67,014	28,871	18,818	–	–	14,954 2 0	2,325 19 8	1,419 6 2	510 11 11
Tyrone.												
Altmore,	345	345	–	2,336	2,336	346	6 15 0	5 4	–	–	38 18 8	27 2 6
Arboe,	3,625	639	3,593	14,743	9,446	2,448	6 1 0	1 4	3,623 5 0	–	324 8 8	46 0 5
Ballygawley,	3,085	157	2,150	8,322	8,019	1,544	5 7 0	1 9	3,032 0 0	50 2 5	254 18 4	61 3 4
Beragh,	2,720	1,020	2,698	8,729	8,729	1,398	6 5 0	2 5	2,279 16 0	439 14 4	218 4 6	86 11 7
Castlederg,	2,393	37	2,382	6,425	6,382	1,105	5 16 0	1 6	2,391 19 0	–	160 5 4	23 4 2
Coalisland,	2,850	477	2,848	11,370	6,659	2,451	4 12 0	1 4	2,772 10 0	76 12 10	226 6 1	54 16 8
Coagh,	3,732	832	3,670	16,126	10,297	3,077	5 4 0	1 0	3,714 17 0	13 13 7	330 5 9	75 10 10
Cookstown,	3,030	1,020	3,081	13,054	6,675	3,020	4 6 0	0 10	2,895 17 0	188 14 0	273 3 10	21 12 9
Dromore,	3,569	620	3,526	13,165	11,328	1,941	6 15 0	1 9	3,405 9 0	162 5 2	313 15 6	79 11 1
Drumquin,	4,177	1,718	4,102	13,977	13,902	2,081	6 14 0	1 8	3,719 5 0	455 7 4	340 15 2	59 12 8
Kildress,	–	–	–	3,989	3,989	612	6 10 0	2 6	–	–	99 14 6	37 10 6
Kilskeery,	1,139	520	1,135	4,324	4,324	736	5 17 0	2 4	1,138 16 0	–	135 2 6	39 8 7
Newtownstewart,	5,300	1,593	5,249	19,955	19,521	3,177	6 5 0	1 5	5,293 15 0	3 14 5	332 11 8	145 7 10
Omagh (New),	2,575	375	2,557	8,278	8,268	1,646	5 0 0	1 1	2,048 7 0	525 18 0	258 10 10	66 17 10
Pomeroy,	3,054	504	3,053	9,895	9,895	1,620	6 2 0	1 7	3,030 8 0	22 17 2	309 4 4	46 9 5
Stewartstown,	4,705	990	4,671	19,693	11,746	3,874	5 1 0	1 3	4,696 4 0	–	426 2 0	57 14 7
Strabane,	3,047	74	3,041	10,075	8,773	1,835	5 9 0	1 4	3,002 18 0	40 15 8	241 0 6	60 16 3
	49,406	10,921	47,756	184,456	150,289	32,911	–	–	47,045 6 0	1,979 14 11	4,283 8 2	989 11 0
Waterford.												
Tallow,	844	–	799	3,846	–	1,558	2 9 0	0 7	829 12 0	–	64 2 0	28 7 6
Waterford,	2,844	644	2,841	13,407	–	2,445	5 9 0	1 3	2,687 1 0	154 8 1	223 9 0	44 13 5
	3,688	644	3,640	17,253	–	4,003	–	–	3,516 13 0	154 8 1	287 11 0	73 0 11
Westmeath.												
Mayne,	131	21	131	607	–	304	2 0 0	0 4	131 10 0	–	10 2 4	3 9 1
Moate,	1,191	204	1,188	5,368	1,488	1,421	3 15 0	1 1	1,095 14 0	95 18 6	108 1 4	20 7 11
St.Mary's,Athlone	2,853	783	2,848	11,536	7,129	2,940	3 18 0	1 1	2,737 12 0	111 6 5	296 4 7	75 10 8
	4,176	1,008	4,167	17,511	8,617	4,665	–	–	3,964 16 0	207 4 11	414 8 3	99 7 8
Wexford.												
Enniscorthy,	1,103	189	1,099	4,938	–	1,498	3 6 0	1 2	954 14 0	148 6 7	82 6 0	67 10 10
New Ross Benevolent,	3,506	1,126	3,378	13,317	9,017	3,240	4 2 0	0 11	3,505 0 0	–	297 1 10	157 16 9
New Ross National,	2,768	1,473	2,232	7,687	5,553	1,371	5 12 0	3 5	2,532 13 0	226 14 9	173 15 4	96 18 1
	7,377	2,788	6,709	25,942	14,570	6,109	–	–	6,992 7 0	375 1 4	553 3 2	322 5 8
Wicklow.												
Baltinglass,	590	53	589	2,423	1,496	638	3 10 0	1 3	532 4 0	57 13 6	62 4 0	10 17 6
Imaal,	1,248	286	1,248	3,839	3,542	736	5 4 0	2 0	858 3 0	389 18 3	115 12 9	33 17 6
Kiltegan,	566	343	565	2,143	1,572	558	3 17 0	1 7	496 1 0	69 5 9	58 12 10	15 2 9
Moyne,	651	197	648	2,875	1,868	645	4 9 0	1 1	597 18 0	50 4 9	75 3 2	10 16 2
	3,055	879	3,050	11,280	8,478	2,577	–	–	2,484 6 0	567 2 3	311 12 9	70 13 11

ending 31st December, 1860, as rendered to the LOAN FUND BOARD—*continued*.

Gross Profit, being the Total Amount received for Discount, Fines, and Cards, or Application Papers, in 1860.	Total Paid as Salaries or Wages during 1860.	Number of Paid Servants employed.	Total Expenses of Management, including Salaries or Wages, and Loss on Notes in 1860.	Amount of Interest paid for Capital.	Number of Depositors owing said Capital.	Net Loss of 1860 (if any after payment of Interest and all Expenses, and deducting any Bad Debts.	Net Profit of 1860 (if any) after payment of Interest and all Expenses, and deducting any Bad Debts.	Amount of Bad Debts charged to Stock in 1860.	Amount actually Expended for Charitable Purposes in 1860.	HONORARY OFFICERS: TREASURERS.
£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	
665 4 8	271 16 4	6	346 11 6	211 15 9	63	–	86 17 5	20 0 0	–	John M'Donnell, Esq.
244 4 7	58 0 0	3	77 12 5	95 12 5	25	–	79 19 9	–	53 3 2	R. St. George, Esq., J.P.
148 3 8	56 0 0	3	76 4 6	38 14 1	11	–	23 5 1	10 0 0	–	Thomas Yeates, Esq.
230 13 11	96 0 0	3	117 2 0	88 7 6	10	19 14 6	–	44 19 0	–	George Leech, Esq.
193 0 1	63 0 0	2	81 19 7	94 5 0	13	–	16 15 6	–	–	John Gray, Esq.
816 2 3	273 0 0	11	352 18 6	316 19 0	59	19 14 6	111 0 4	54 19 0	53 3 2	
126 6 5	46 0 0	2	61 6 5	43 10 5	65	–	21 9 10	–	–	Robert Proctor, Esq.
307 2 10	143 3 8	3	212 6 8	17 0 5	5	–	77 15 9	–	50 0 0	Mr. Matthew O'Ryan.
155 1 4	51 6 2	4	60 9 2	36 1 0	6	–	58 11 0	–	–	John M'Carthy, Esq.
761 12 10	218 12 0	5	294 16 11	221 17 0	47	–	244 18 11	–	100 0 0	William Wolfe, Esq.
442 1 7	183 0 0	3	238 12 0	92 0 5	9	–	111 9 2	–	87 0 0	Daniel Guilfoyle, Esq.
330 15 9	102 10 0	3	124 11 3	110 8 0	33	–	95 16 6	–	50 0 0	T. P. Morissy, Esq.
2,123 0 9	744 11 10	20	992 2 5	520 17 3	165	–	610 1 2	–	287 0 0	
67 10 0	66 13 4	3	92 7 1	40 17 0	23	66 10 10	–	–	596 0 0	Daniel Shields, Esq.
391 13 5	130 0 0	4	170 9 1	133 0 5	38	–	88 3 11	–	–	Daniel Donnelly, Esq.
330 5 9	85 0 0	3	138 10 0	154 11 0	24	–	37 4 9	–	–	Mervyn Stewart, Esq., J.P.
317 3 0	110 0 0	5	172 19 8	107 18 4	27	–	6 15 0	29 10 0	91 7 11	Paul Dane, Esq.
192 1 11	40 0 0	2	83 0 9	171 17 4	21	–	37 3 10	–	–	Joseph Scott, Esq., J.P.
301 17 4	122 0 0	3	168 16 5	111 0 5	35	–	22 0 6	–	5 0 0	Rev. W. Young.
431 9 5	115 0 0	4	159 0 2	155 18 10	9	–	116 10 5	–	100 0 0	Mr. Samuel E. Ekin.
331 19 3	95 0 0	3	132 6 10	106 17 1	10	–	92 15 4	–	70 10 0	S. E. Weir, Esq.
409 8 11	130 0 0	3	170 13 4	162 2 3	26	–	59 17 4	16 16 0	–	Mr. Robert Warnock.
417 19 1	130 0 0	2	174 3 10	127 2 4	20	–	116 12 11	–	21 0 0	Edward Sproule, Esq.
142 7 0	61 0 0	3	76 9 1	70 1 2	34	–	31 19 3	27 16 0	223 18 11	George E. Tener, Esq.
180 13 9	70 0 0	3	88 9 8	58 8 0	9	–	33 16 1	–	2 11 6	Rev. J. G. Porter, J.P.
505 15 3	157 18 0	6	224 9 4	186 10 6	34	–	94 15 5	–	135 0 0	John Rogers, Esq., J.P.
339 3 0	92 0 0	2	133 3 7	110 9 4	17	–	95 10 2	–	–	Mr. William T. M'Creery.
369 3 9	108 0 0	3	132 15 0	124 0 0	25	–	112 8 9	–	–	Robert Henry, Esq.
519 3 2	190 0 0	4	247 4 0	186 14 11	30	–	85 4 3	–	39 9 5	S. R. Magill, Esq., J.P.
317 6 10	101 0 0	4	123 6 3	119 10 5	25	–	74 10 2	–	–	Samuel Dunn, Esq.
5,565 0 10	1,803 11 4	57	2,488 4 1	2,126 19 4	407	66 10 10	1,105 8 1	74 2 0	1,284 17 9	
105 9 2	36 0 0	1	49 7 0	41 19 3	5	–	14 2 11	–	–	Mr. Joseph Sewell.
293 13 2	120 0 0	3	155 16 0	109 7 2	25	–	24 10 0	–	25 0 0	V. R. Delandre, Esq.
399 2 4	156 0 0	4	205 3 0	151 6 5	30	–	38 12 11	–	25 0 0	
14 16 8	5 0 0	2	6 5 3	4 19 0	6	–	3 12 5	–	5 0 0	Miss E. Pakenham.
153 7 10	77 0 0	3	96 5 1	49 8 0	32	–	7 14 9	–	–	W. C. Clibborn, Esq.
401 13 2	140 0 0	3	169 13 7	104 18 4	32	–	127 1 2	–	–	Mr. Patrick Geoghegan.
569 17 8	222 0 0	8	272 3 11	159 5 4	70	–	138 8 4	–	5 0 0	
165 14 2	74 0 0	4	89 6 2	32 10 0	10	–	43 18 0	–	20 0 0	Edward J. Lett, Esq.
471 0 3	100 0 0	2	157 11 11	116 9 9	35	–	196 18 7	–	168 10 9	Rev. P. Crane.
286 6 8	134 10 0	3	186 15 8	64 3 5	16	–	35 7 7	47 8 0	146 0 0	John Ussher, Esq., J.P.
923 1 1	308 10 0	9	433 13 9	213 3 2	61	–	276 4 2	47 8 0	334 10 9	
78 7 10	37 10 0	2	42 3 10	26 8 6	33	–	9 16 1	–	–	Peter Douglas, Esq.
155 10 1	50 0 0	4	73 19 5	40 17 0	26	–	40 13 7	–	24 15 0	Michael Fenton, Esq., J.P.
78 10 4	36 0 0	3	45 4 7	9 12 10	10	–	23 12 11	–	12 12 0	Rev. J. Dowse.
91 6 10	25 0 0	2	36 8 7	23 14 4	12	–	31 3 11	–	16 0 0	Rev. T. O. Fetherston H.
403 15 1	148 10 0	11	197 16 5	100 12 8	81	–	105 6 6	–	53 7 0	

APPENDIX (A) No. 3.

STATEMENT of LOAN FUNDS DISSOLVED by order of the Loan Fund Board of Ireland, since the Year 1847.

County.	Name of Loan Fund.	Date of Gazetting.	Name of Receiver.	Liabilities when Gazetted £ s. d.	Dividends paid to Depositors.	Now due to Depositors. £ s. d.	Amount in Bank on Dec. 31, 1860. £ s. d.	Observations.
Carlow,	Rathvilly,	8th January, 1847,	—	928 0 0	14s. 6½d. per pound,	290 0 0	—	Finally closed.
Cavan,	Kingscourt,	8th December, 1850,	—	784 0 0	4s. 6d., 4s. 6d., 5s., & 4s. 6d.; total, 18s. 6d. per pound.	58 16 0	—	Do.
Do.,	Cootehill,	4th December, 1848,	W. Roundtree,	451 0 0	10s. 6d. and 3s. per pound,	110 10 0	—	Do.
Cork,	Mitchelstown,	3rd April, 1855,	J. P. Forrest,	805 0 0	18s. and 2d. per pound,	114 14 0	—	Do.
Do.,	Cork Charitable,	18th October, 1856,	Peter Dillon,	2,215 13 0	Capital free. Nothing due to depositors.	—	—	Do. The whole capital of society was free, arising from a donation chiefly of Henry Sheares, Esq., in 1774. The total loss sustained by the frauds committed on this charity and the amount of charges incidental to winding up, legal proceedings, &c., was £1,341 4s. 6d., leaving available for the formation of a new society £874 8s. 6d., and in addition to that sum, £305 15s. 5d. derived from surplus assets of Cork No. 1 Society, closed. Total capital, £1,180 3s. 11d.
Fermanagh,	Lowtherstown,	3rd August, 1849,	A. Aikin,	260 0 0	Paid in full,	—	—	Do.
Galway,	Loughrea,	5th January, 1850,	Richard O'Neill,	—	Do.,	—	—	Do. Assets of old fund derived from original charitable bequest £529 5s. 8d. transferred to newly established society, which, with interest, when transferred in June, 1852, amounted to £587 4s. 11d.
Do.,	Mountshannon,	5th May, 1849,	William Mills,	1,621 0 4	9s. 8d. per pound,	1,324 0 0	—	Do. £300 recovered from P. Reade, Esq., J.P., paid to the depositors. Since payment of dividend £6 12s. 10d. has been received, which amount has been applied to Board's charges, and relodged.
Kilkenny,	Kilkenny,	24th August, 1849,	J. Hackett,	216 1 8	Paid in full,	—	—	Do.
King's,	Edenderry,	14th August, 1848,	John Gill,	155 0 0	Paid in full to all save Treasurer,	46 0 0	5 0 0	Do. Only loss sustained by Treasurer, £46. £5 in Bank of Ireland, lodged to Board's credit, for which there is a cheque in Secretary's hands since June, 1850, in favour of the Marquis of Downshire, amount of a deposit of the late Marquis in this Society.
Do.,	Birr,	6th October, 1849,	J. Meara,	742 0 0	6s. 8d. and 9d. per pound,	463 5 11	—	Do.
Longford,	Killashee,	20th April, 1849,	Samuel Wilson,	473 0 0	10s. and 2s. 6d. per pound,	155 2 10	—	Do.
Monaghan,	Drumskelt,	25th March, 1848,	William Kerr,	750 0 0	6s. 8d. per pound,	493 8 11	—	Do.
Sligo,	Ballysumahan,	15th January, 1849,	W. Longhead,	627 0 0	Nil,	627 0 0	—	Do. A total loss of deposits.
Do.,	Coolaney,	21st April, 1849,	James Simpson,	497 0 0	1s. 5d. per pound,	462 13 9	—	Do.
Do.,	Lissadill,	28th May, 1852,	Geo. Somerville,	795 0 0	Paid in full,	—	—	Do.
Tipperary,	Ballingarry,	4th September, 1848,	J. Quinlan,	995 0 0	4s. per pound,	797 17 7	—	Do.
Do.,	Carrick-on-Suir,	8th August, 1848,	Thomas Long,	262 0 0	20s. to depositors; 10s. to managers.	105 0 0	0 12 0	Do. Loss in this case sustained by Managers.
Do.,	Moyglass,	4th September, 1848,	Richard Purcell,	835 0 0	2s. 6d., 3s., and 1s. 6d. per pound,	670 12 6	—	Do.
Do.,	Moyne,	20th January, 1850,	J. Russell,	384 0 0	Nil,	384 0 0	—	Do. The allowed claims in this case were £384; of this amount a portion has been recovered by depositors from Treasurer, and proceedings are still pending. The amount of disallowed claims was £351.
Do.,	Thurles Agricultural	27th February, 1852,	—	952 19 0	5s., 1s. 1d., and 7s. 3d. per pound.	345 3 0	—	Do. There was in Bank the amount of two dividends applicable to claim of Anastatia Codd, namely, £1 3s. 10d. and £7 19s. 6d., making together £9 3s. 4d., which sum has been divided between two sisters of deceased depositor, Anastatia Codd.
Waterford,	Waterford, King-st.,	13th November, 1850,	Benj. Collins,	773 0 0	8s. 8d. per pound,	438 0 0	14 10 9	Do. Assets in Bank on 1st January, 1859, £16 18s. 1d.; received two gales of interest on late Treasurer's bond, £10; total amount, £26 18s. 1d.; amount of costs paid to Board's Solicitor, £22 7s. 4d., leaving in Bank £4 10s. 9d. There has been received from Treasurer in 1860 amount of interest, £10.
Westmeath,	Castletowndelvin,	16th January, 1852,	Patrick Fagan,	1,029 6 7	8s. and 10d. per pound,	574 16 4	1 10 3	Do. There is in Bank £1 10s. 3d. applicable to a dividend due to F. Gee of 16s. 8d., and leaving a balance of 13s. 7d. applicable to a claim of Solicitor, 4s. 1d., and of Board, 9s. 6d.
Do.,	Mullingar,	27th October, 1851,	Edward Coffey,	1,266 5 6	8s. 6d. per pound,	728 3 2	0 12 3	Do. The balance in Bank, applicable to Board's costs, 12s. 3d.
Do.,	Killucan,	15th April, 1853,	Richard Shaw,	316 4 4	By the reduction of certain claims, and arrangements made with depositors, £219 was divided amongst them.	97 0 0	—	Do.
Wexford,	Clohamon,	22nd January, 1847,	J. Morrissey,	1,768 0 0	10s. and 5s. per pound,	445 0 0	—	Do.
Do.,	Boro,	2nd January, 1852,	—	1,116 0 0	15s. per pound,	279 0 0	—	Do.
Do.,	Gorey,	15th May, 1852,	James Floyde,	480 12 0	15s. per pound,	120 3 0	—	Do.
Do.,	Wexford General,	27th February, 1852,	Benjamin Allen,	3,225 0 0	7s. 9d. and 6½d. per pound,	1,888 0 0	—	Do.
Do.,	New Ross Charitable	27th May, 1848,	—	335 0 0	Nil,	—	370 9 1	Do. Free capital, lodged to Board's credit in the Bank of Ireland, applicable to charitable or useful purposes in the locality, on the 1st of January, 1861, was £370 9s. 1d.; total receipts from date of gazetting, £421 9s. 10d.; payments made by Board on account of Society, £51 0s. 9d., leaving an available balance in Bank of Ireland to Board's credit of £370 9s. 1d.

APPENDIX (A) No. 4.

RETURN of INSPECTIONS by BOARD'S OFFICER, during the year 1860.

Name of Loan Fund.	Date of Inspection in 1860.	Date of last preceding Inspection.	Name of Loan Fund.	Date of Inspection in 1860.	Date of last preceding Inspection.
New Cork Charitable,	5th Jan.,	11th May, 1859.	Cornasoo,	25th June,	15th Oct., 1858.
New Cork Charitable (Special),	5th Jan.,	—	Raw,	28th June,	15th Nov., 1858.
Ballygawley,	18th Jan.,	14th Aug., 1858.	Durrow,	10th July,	13th July, 1859.
Newtownstewart,	21st Jan.,	4th Sept., 1858.	Durrow (Special),	12th July,	10th July, 1860.
Strabane,	24th Jan.,	First Inspection.	Abbeyleix,	13th July,	16th Mar., 1859.
Raphoe,	26th Jan.,	7th Sept., 1858.	Maryboro',	14th July,	9th Mar., 1859.
Castlederg,	28th Jan.,	First Inspection.	Timahoe,	17th July,	11th Mar., 1859.
Clara (Special),	13th Feb.,	17th Feb., 1859.	Mountrath,	19th July,	22nd Mar., 1859.
Athlone,	20th Feb.,	6th Nov., 1858.	Portarlington,	21st July,	14th Mar., 1859.
St. Mary's, Athlone,	24th Feb.,	2nd Nov., 1858.	Edgeworthstown,	14th Aug.,	14th Feb., 1859.
Mayne,	27th Feb.,	30th Nov., 1857.	Annaduff,	16th Aug.,	11th Jan., 1859.
Ballyjamesduff,	29th Feb.,	12th Oct., 1858.	Cloone,	17th Aug.,	3rd May, 1860.
Kells,	2nd Mar.,	9th Oct., 1858.	Drumcliff,	18th Aug.,	16th Dec., 1858.
Lack,	19th Mar.,	26th Jan., 1859.	Sligo,	20th Aug.,	14th Dec., 1858.
Lowtherstown,	22nd Mar.,	First Inspection.	Sligo (Special),	21st Aug.,	20th Aug., 1860.
Kesh,	24th Mar.,	9th Dec., 1858.	Tubbercurry,	22nd Aug.,	17th Dec., 1858.
Lisbellaw,	26th Mar.,	22nd Nov., 1858.	Aclare,	23rd Aug.,	18th Dec., 1858.
Kilskeery,	28th Mar.,	27th Nov., 1858.	Swineford,	24th Aug.,	22nd Dec., 1858.
Enniskillen,	29th Mar.,	18th Nov., 1858.	Foxford,	25th Aug.,	20th Dec., 1858.
Tempo,	31st Mar.,	20th Nov., 1858.	Bellaghy,	27th Aug.,	24th Dec., 1858.
Crichton,	3rd April,	17th Nov., 1858.	Kiltimagh,	29th Aug.,	21st Dec., 1858.
Ballintra,	16th April,	6th Dec., 1858.	Lucan,	10th Sept.,	5th July, 1859.
Letterkenny,	18th April,	10th Dec., 1858.	Johnston Charitable,	12th Sept.,	27th June, 1859.
Londonderry,	21st April,	13th Dec., 1858.	Dublin, South-Eastern,	14th Sept.,	30th June, 1859.
Buncrana,	23rd April,	16th Sept., 1858.	Athy,	17th Sept.,	24th Mar., 1859.
Carndonagh,	25th April,	18th Sept., 1858.	Fontstown,	20th Sept.,	26th Mar., 1859.
Culdaff,	27th April,	20th Sept., 1858.	Crettyard,	22nd Sept.,	1st Sept., 1859.
Moville,	30th April,	22nd Sept., 1858.	Limerick Pery and Jubilee,	25th Sept.,	12th April, 1859.
Cloone,	2nd May,	13th Jan., 1859.	Limerick Industrial,	27th Sept.,	16th April, 1859.
Cloone (Special),	3rd May,	2nd May, 1860.	Askeaton,	27th Sept.,	18th April, 1859.
Altmore (Special),	16th May,	14th Dec., 1859.	Ballingarry,	1st Oct.,	21st April, 1859.
Kildress,	17th May,	5th July, 1858.	Miltown Malbay,	4th Oct.,	14th April, 1859.
Moree (Special),	18th May,	31st Aug., 1858.	Lowtherstown (Special),	26th Oct.,	22nd Mar., 1860.
Clonaneese (Special),	18th May,	2nd July, 1858.	Lack (Special),	27th Oct.,	19th Mar., 1860.
Dromore (Special),	19th May,	21st Dec., 1859.	Castlederg,	29th Oct.,	28th Jan., 1860.
Moate,	28th May,	15th Feb., 1859.	Strabane,	31st Oct.,	24th Jan., 1860.
Athlone (Special),	30th May,	20th Feb., 1860.	Nenagh,	16th Nov.,	22nd June, 1859.
Shrule,	31st May,	15th Jan., 1859.	Cashel,	3rd Dec.,	30th Sept., 1859.
Abbeyshrule,	2nd June,	10th Mar., 1859.	Fethard,	6th Dec.,	4th Aug., 1859.
Ballinasloe,	5th June,	22nd Feb., 1859.	Roscrea,	8th Dec.,	6th April, 1859.
Loughrea,	8th June,	25th Feb., 1859.	Tipperary,	11th Dec.,	8th Aug., 1859.
Lowtherstown (Special),	18th June,	22nd Mar., 1860.	Galbally,	14th Dec.,	10th Aug., 1859.
Lack (Special),	20th June,	19th Mar., 1860.	Callan,	17th Dec.,	3rd Sept., 1859.
Kesh (Special),	20th June,	24th Mar., 1860.	Thomastown,	19th Dec.,	6th Sept., 1859.

APPENDIX (B) No. 1.

REPORT of the COMMITTEE of the NOTE and DEBENTURE ISSUE for 1860, and AUDIT of the BOARD'S EXPENDITURE during the same year.

The Committee to audit the above met on the 22nd day of March, 1861, for that purpose.

Your Committee find there were, . . . 68,600
Notes in Stock on 1st January, 1860.
That on the 16th of March, 1860, were ordered, 200,000

Making to be accounted for, . . . 268,600
Of these were issued during 1860, . . 199,600

Leaving in Stock on 1st January, 1861, . 69,000

Your Committee having examined the Stock at date of audit, and taken into account the Notes issued since the 1st of January last, find the above number were actually in Stock at that date.

It will be seen by the annexed account that £831 13*s.* 4*d.*, for the 199,600 notes issued at 1*d.* each, has been duly lodged to your credit in the Bank of Ireland.

Your Committee find that the number of the last debenture issued in the year 1860, was . 13,542
Deducting the number issued to the 31st December, 1859, ... 13,189

It will appear that 353
Debentures were issued during 1860.

It will be seen by the annexed account that £17 13*s.* for the 353 debentures, issued at 1*s.* each, has been duly lodged to the credit of the Board in the Bank of Ireland.

Your Committee find there were . . 726
deposit cards in Stock on 1st January, 1860.
Of these were issued, during the year 1860, . 18

Leaving in Stock on the 1st January, 1861, . 708

Your Committee having examined the Stock at date

APPENDIX (B) No. 1—*continued.*

of audit, and taken into account the cards issued since the 1st of January last, find the above number were actually in Stock at that date.

It will be seen by the annexed account that 9*d.*, for the 18 cards issued at ½*d.* each, has been duly lodged to the credit of the Board.

Your Committee find there was a sum of 1*s.* lodged to your credit, for one "paid" brand sold to a Local Society to 31st December, 1860.

Your Committee find the April and October dividends on your Funded Stock have been duly lodged to your credit, amounting to £134 17*s.* 4*d.*

Your Committee find there was a sum of £1 10*s.* 10*d.* lodged by the Aghada Loan Fund, being for interest on balance of original loan advanced by the Board to the said Society, to 31st December, 1860.

Your Committee find there was a third instalment paid of £10, by the Aghada Loan Fund, of the original debt of £97 due by that Society, and duly lodged to your credit.

These several sums, added to the balance in Bank reported at last audit, give a total of £1,605 4*s.* 9*d.*

Your Committee find that drafts to the amount of £1,142 19*s.* 10*d.* were signed by the Board, in conformity with your minutes, of which particulars are annexed.

From the total, then, of . . .		£1,605	4 9
Is to be deducted drafts for . .		1,142	19 10
Which should leave a balance of . in Bank.		462	4 11

Your Committee find the Bank gives you credit for this balance.

ACCOUNT, NOTE, and DEBENTURE AUDIT, and EXPENDITURE for the Year 1860.

1860:		£ s. d.	£ s. d.
Jan. 1,	To Balance in Bank [net], ...	—	609 8 6
	Lodgments for Notes, per Secretary, . . .	799 3 4	
	Do. do. direct, ...	32 10 0	
			831 13 4
	Lodgments for Debentures, per Secretary, . .	16 17 0	
	Do. do. direct, . . .	0 16 0	
			17 13 0
	Lodgments for Deposit Cards, per Secretary, . .	0 0 9	
	Do. do. direct, . . .	—	
			0 0 9
	Lodgment for Brands, per Secretary, . . .	0 1 0	
	Do. do. direct, . . .	—	
			0 1 0
April 5,	Dividend on Stock on £4,640 8*s.* 8*d.*, £69 12 2		
	Less Income Tax, . . 1 9 0		
		68 3 2	
Oct. 11,	Dividend on Stock on £4,640 8*s.* 8*d.*, £69 12 2		
	Less Income Tax, . . 2 18 0		
		66 14 2	
			134 17 4
	Lodgment for Year's Interest on Balance of original Loan advanced to the Aghada Loan Fund, . .	1 10 10	
	Second Instalment paid by Aghada Loan Fund of the original debt of £97 due by that Society, . .	10 0 0	
			11 10 10
			1,605 4 9
	From which deduct Year's Drafts, . . .		1,142 19 10
	Balance in Bank [net], on the 1st of January, 1861, .		462 4 11

(Signed)

BELMORE.
JAMES POWER, BART.
JOHN ENNIS.
J. LENTAIGNE.
W. P. URQUHART.
J. G. PORTER.

REPORT of the COMMITTEE on the PETTY EXPENSE ACCOUNT for 1860.

The Committee appointed to audit the Petty Expense Account for 1860, met on the 5th day of April, 1861.

Your Committee report that they find a balance of £8 0*s.* 6*d.* was in the hands of Secretary for current expenses at date of last audit.

Your Committee charged the Secretary with this balance, and the sum of all the drafts drawn in 1860, making together a sum of £1,151 0*s.* 4*d.*, as explained at foot.

Vouchers for all the payments made, as per the annexed account, were submitted, and having been examined one by one, your Committee have to report the same correct.

Your Committee find a balance in the Secretary's hands of £17 16*s.* 11*d.* on the 31st of December, 1860, which is to be charged to him as the basis of next audit.

	£ s. d.
Balance in Secretary's hands, 1st January, 1860, ...	8 0 6
Amount of Drafts drawn in 1860, including Draft No. 12304 for £200 for investment in Government Stock, . .	1,142 19 10
	1,151 0 4
Deduct Expenditure and investment, as per annexed account, . . .	1,133 3 5
Balance in Secretary's hands, 1st January, 1861, ...	17 16 11

APPENDIX (B) No. 1.—*continued.*

ACCOUNT adverted to in the Annexed Reports, showing PARTICULARS of EXPENDITURE.

	£	s.	d.
Salaries of Board's Officers,	762	0	0
Printing of Promissory Notes and Debentures,	91	12	9
Petty Expenses,	5	11	7
Law Charges, Ordinary,	30	2	9
Do., Extraordinary,	7	8	0
Extra Inspection Expenses,	4	7	0
Inspector's Postage Account, and other extra charges,	3	14	7
Income Tax paid for Board's Officers to 20th Sept., 1860,	24	10	0
Coals for Offices,	3	16	9
Government Stock, bought in 1860,	200	0	0
	£1,133	3	5

(Signed) G. H. LINDSAY, *Chairman.*
W. H. F. COGAN.

APPENDIX (B) No. 2.

Showing ORDINARY INCOME and EXPENDITURE of the BOARD for 1859 and 1860.

1859.

ORDINARY SOURCES OF INCOME.	£	s.	d.
Receipts for Notes and Debentures, &c.,	887	11	9
Dividends on Stock,	127	18	2
	£1,015	9	11
ORDINARY EXPENDITURE.			
Salaries,	762	0	0
Printing,	91	12	6
Petty Expenses,	3	12	2
Inspector's Postage Account,	3	4	8
Extra Inspection Expenses,	10	0	0
Coals for Offices,	2	16	0
Law Charges,	29	9	10
	£902	15	2
Excess of Ordinary Income over Ordinary Expenditure for the year 1859,	£112	14	9

1860.

ORDINARY SOURCES OF INCOME.	£	s.	d.
Receipts for Notes and Debentures, &c.,	849	8	1
Dividends on Stock,	134	17	4
	£984	5	5
ORDINARY EXPENDITURE.			
Salaries,	762	0	0
Printing,	91	12	9
Petty Expenses,	5	11	7
Inspector's Postage Account,	3	14	7
Extra Inspection Expenses,	4	7	0
Coals for Offices,	3	16	9
Law Charges,	30	2	9
	£901	5	5
Excess of Ordinary Income over Ordinary Expenditure, for the year 1860,	£83	0	0

APPENDIX (C).

A LIST of the MEMBERS of the LOAN FUND BOARD, with the dates of their respective Appointments, and the Number of Attendances of each Member at the Sittings of the Board, for the Year ending 31st December, 1860.

N.B.—The Board held 13 Sittings during the Year 1860.

MEMBERS' NAMES.	Dates of Appointment.	No. of Attendances
The Right Honourable the Earl of Fingall,	2nd Jan., 1837.	—
Fitzstephen French, Esq., M.P.,	,,	—
Viscount De Vesci,	,,	2
Sir James Power, Bart., D.L.,	,,	2
Edward Joshua Cooper, Esq.,	,,	—
Sir Matthew Barrington, Bart. (deceased),	,,	—
Thomas Hutton, Esq., D.L.,	,,	7
James O'Farrell, Esq.,	,,	—
John D'Alton, Esq.,	,,	—
William Hodges, Esq.,	25th Oct., 1837.	—
Rev. Thomas Hincks, D.D.,	10th Feb., 1841.	—
John Lentaigne, Esq.,	,,	10
The Right Honourable the Earl of Clancarty,	14th Jan., 1842.	—
The Right Honourable the Earl of Erne,	,,	—
The Right Honourable the Lord Downes,	,,	—
The Viscount Boyle,	,,	—
The Honourable and Very Rev. Robt. Maude, Dean of Clogher,	,,	—
James William Lennox Naper, Esq., V.L.,	,,	—
The Right Honourable William Fownes Tighe,	,,	—
Colonel Robert Owen, J.P.,	20th Jan., 1842.	—
John Barlow, Esq., J.P.,	9th Jan., 1843.	—
John Ennis, Esq., D.L., M.P.,	9th Jan., 1843.	2
John N. V. Vernon, Esq.,	,,	—
The Very Rev. Chas. Vignolles, D.D., Dean of Ossory,	,,	—
John Brennan, Esq.,	24th Jan., 1845.	—
George H. Lindsay, Esq., D.L.,	13th Jan., 1846.	7
Thomas Crosthwaite, Esq.,	,,	—
Walter Sweetman, Esq.,	20th Jan., 1846.	1
The Very Rev. H. U. Tighe, D.D., Dean of Derry,	18th Feb., 1846.	6
The Very Rev. H. Newland, D.D., Dean of Ferns,	30th June, 1846.	—
The Rev. J. G. Porter, J.P.,	30th Jan., 1851.	1
The Right Honourable Lord Talbot de Malahide,	28th Mar., 1854.	1
Jas. Hans Hamilton, Esq., M.P.,	,,	—
Lieut.-Col. George Gore Ouseley Higgins,	12th Sept., 1856.	1
The Right Honourable the Earl of Belmore,	14th April, 1858.	1
William Jones Westby, Esq., D.L.	15th June, 1859.	5
W. H. F. Cogan, Esq., M.P.	12th April, 1860.	—
Wm. Pollard Urquhart, Esq., M.P.	6th Feb., 1861.	—
Counsel—Wm. O'Connor Morris, Esq., 34, Lower Ormond-quay,	13th May, 1859.	
Secretary—Rich. Robt. Madden, Esq., Dublin Castle,	19th Mar., 1850.	

DUBLIN: PRINTED BY ALEX. THOM & SONS, 87 & 88, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

TOPOGRAPHICAL DEPARTMENT, WAR OFFICE.

85.

REPORT OF THE PROGRESS

OF THE

ORDNANCE SURVEY

AND

TOPOGRAPHICAL DEPÔT,

To the 31st December 1860.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

2006.

1861.

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„ 6 Do. do. on the 1-inch scale.

REPORT.

SECTION I.

GENERAL STATEMENT OF PROGRESS.

England.

In the Report of the Progress of the Ordnance Survey to the 31st December 1859, it was stated that the six northern counties of England which have been ordered to be surveyed on the larger scales of six inches and 25 inches to a mile, would be finished during the present financial year, but in consequence of the very numerous and extensive surveys which have been ordered for purposes connected with the Defences of the country, and upon which 390 surveyors and draftsmen have been employed, the progress in the north of England has been greatly retarded, and the surveys of Northumberland and Cumberland are still unfinished. The progress of the survey was also greatly retarded by the almost unprecedented wet summer and cold severe winter.

Scotland.

The progress of the survey of Scotland, and of the revision of the northern counties of Ireland, has been also greatly retarded by the same causes, a portion of the surveyors and draftsmen for the military surveys having been taken from the parties employed in those parts of the kingdom.

The surveys of the counties of Dumbarton, Stirling, and Clackmannan were finished last year, and the survey is now proceeding in Perthshire and Forfarshire, and these counties will be finished during the financial year 1861–2.

Ireland.

The revision of the county of Armagh has been finished during the last year, and the revision is now in progress in the county of Louth.

The outline map of Ireland, on the scale of one inch to a mile, will be finished on the 31st March next, and 12 sheets, with the hill features engraved, have been published, and several others are in progress.

Numerous plans on the $\frac{1}{2500}$ scale, replotted from the original survey, have been made during the last year for the Landed Estates Court, the Judges of the Court having found from experience that for the registration and transfer of property, plans on this scale, and made under the authority of Government, are absolutely necessary; but the entire cost of replotting these plans is paid by the Court out of the proceeds of the sales of the estates.

Military Surveys.

London and the Thames.—This survey will embrace a considerable area round London.

Chatham and Sheerness.—This will embrace a large area round these towns.

Portsmouth and the Isle of Wight.—This includes a district round Portsmouth, extending from the East of Hayling Island to the river Hamble, about 10 miles, with a breadth of about 6 miles, and part of the Isle of Wight.

Plymouth and its Environs.—This includes a district of about 13 miles in length E. and W., and of about 6 miles in depth N. and S.

Pembroke and its Environs.—This includes an area of 10 miles in length by about 7 in depth, besides several detached portions.

Dover.—This includes an area of 5 miles by 4 miles round the town.

Harwich.—This includes an area of 5 miles by 3 miles.

Torbay.—This includes the whole bay, and a belt of country about 1 mile in width round it.

East Hampton.—About 2 miles in width and 1 in depth.

Shoreham.—About 6 miles in width and 1 in depth.

Newhaven.—About 6 miles in width and 2 in depth.

Cannock Chase.—About 6 miles in width and 5 in depth.

These military plans on the $\frac{1}{2500}$ scale have been found necessary, and answer perfectly both for the purchase of the land required for the fortifications and also for the designs for the works themselves.

With the exception of the last all these surveys are made on the scales which have been adopted for the national survey, and drawn on the projections made for the complete survey of the several counties in which these places are situated, so that if Government and Parliament should approve of the extension of the cadastral survey to the remainder of these counties, the plans now made will form integral portions of the national survey.

It is of great importance, now that we are about to complete the survey of Northumberland and Cumberland, that the question of extending the cadastral survey to the remaining three-fourths of England and Wales should be taken into consideration during the present session of Parliament, because if the cadastral survey is to be extended over the remainder of the country it should be undertaken at once, and whilst we have an admirably trained body of surveyors and draftsmen for the performance of the work.

All parties appear to be agreed as to the importance and necessity of having a Court in this country analogous to the Landed Estates Court in Ireland, to give facilities for the transfer and registration of property, and every lawyer knows how important to the working of such a Court is an accurate survey made under the authority of the Government; it has been experimentally proved in Ireland, and will undoubtedly be also proved so here.

II.

LEVELLING.

The principal lines of levelling in England and Wales have been printed during the last year; we have already published the principal lines of levelling taken in Ireland; and those of Scotland are now in the press, and will be very shortly published.

III.

PHOTOZINCOGRAPHY.

In the report for last year I gave copy of an ancient MS. deed in the Record Office, of the time of Edward the First, as a specimen of this art. In the interval which has since elapsed we have considerably improved the art, and we now not only make the reduction of the plans from the larger to the smaller scales with perfect accuracy, but we at once transfer the reduced copies to the copper-plates for the engraver, or to zinc plates or stones for printing, and thus have the means of saving a very large sum annually by it.

The success which has attended our labours in this direction has induced the Lords of Her Majesty's Treasury to order me to make a *fac-simile* copy of that part of Domesday Book which relates to Cornwall by this process, and copies of it have been

sent to the libraries of the Houses of Lords and Commons. The process itself is so extremely simple and inexpensive that the sale of a few copies at 4*s*. 6*d*. a copy will cover the entire expense of the publication.

Should the publication of this portion of the work by this process be approved of and be appreciated by the public, it is the intention of Her Majesty's Government to print the whole work county by county, so as to enable every one to obtain a copy of the part of the country in which he may be more particularly interested at the trifling cost of producing it.

IV.

ANCIENT MS. IRISH MAPS.

By order of the Lords of the Treasury we have printed a collection of maps, described by Sir Thomas Ridgway in a letter, dated March 15, 1609, as "The maps of the six "escheated counties besides the Derry, being but now duly bound up in six several "books for His Majesty's view."

The exact *fac-similes* of these maps will be sent to the Record Office in Dublin, and to the public offices which require them for reference; and copies will be sold to the public.

V.

CONNEXION OF THE TRIANGULATION OF THE UNITED KINGDOM WITH THAT OF BELGIUM.

The Astronomer Royal having represented to the Lords of Her Majesty's Treasury the importance of connecting the triangulation of this country directly with that of Belgium, in order to complete the connexion of our triangulation with that of Prussia and Russia, and to obtain the data for calculating the length of an arc of parallel, extending from Valentia, in the west of Ireland, to Oursk, on the River Oural, about 70° in length, the Lords of the Treasury have directed that the sum of 1,000*l*. should be inserted in the estimates, to enable me to execute the work this year.

VI.

INSTRUCTIONS FOR TAKING METEOROLOGICAL OBSERVATIONS.

I have this year drawn up and published, by order of the Secretary of State for War, a work containing instructions for taking meteorological observations, with the necessary tables for their correction, and with notes on meteorological phenomena.

The Secretary of State for War has on the recommendation of the Director-General of the Army Medical Department, given orders for every army medical officer to provide himself with a copy of this work, and for copies to be issued to the medical students.

VII.

ENGLAND.

1. Survey on $\frac{1}{2500}$ Scale.

The following Table shows the state of the survey and publication of the $\frac{1}{2500}$ plans.

	Area in Square Miles.	Surveyed Square Miles.	Published Square Miles.
Durham - - -	1,097	all	all
Westmoreland - - -	758	all	466
Northumberland - -	1,952	1,408	131
Cumberland - - -	1,565	1,034	—

The publication of the plans of Westmoreland will be completed very shortly, and that of Northumberland and Cumberland is in progress; the plans of two parishes in the latter county having been published during last month.

The number of square miles surveyed during the year 1860 was 919, and 256 square miles have been published; the publication have been greatly delayed by the military surveys and other miscellaneous work required by the War Department.

2. Six-Inch Map.

The counties which have been surveyed and published on 6-inch scale only are,

	Square Miles.
Lancashire - - - - - - -	1,905
Yorkshire - - - - - - -	5,983
Total	7,888

The 6-inch maps of Durham and Westmoreland are in progress.

3. One-inch Map.

Area of England, 58,000 square Miles.

The number of square miles published, with hills complete, is 52,232, and the engraving of the outline map is rapidly advancing towards completion, all the counties being engraved except Westmoreland, Northumberland, and Cumberland, which are in progress. The area engraved during the year has 1,010 square miles in outline, and 800 completed with hills.

4. Towns.

		Sheets.
Engraved in outline and published	London on 5-feet scale -	400
	London on 12-inch scale	44
	London on 6-inch scale -	26

Engraved and published on 10 feet and 2-feet scales. } Alnwick.

Engraved and published on 10 feet or $\frac{1}{500}$ scales { Bishops Auckland. Gateshead. Longton. Plymouth. South Shields. Sunderland.

Drawn on 10 feet and 2 feet scales, but not engraved. These plans were made for the Board of Health and in part paid for by the several towns.	Ashby de la Zouch.	Nantwich.
	Braintree.	Newcastle-under-Lyme.
	Burslem.	Ormskirk.
	Cardiff.	Rugby.
	Chelmsford.	Sandgate.
	Coventry.	Sheerness.
	Dartford.	Stratford-upon-Avon.
	Derby.	Torquay.
	Gloucester.	Uxbridge.
	Hitchin.	Ware.
	Hull.	Warwick.
	Knighton.	Woolwich.
	Margate.	Worthing.
	Merthyr Tydfil.	
Drawn, engraved, and published on the 5-feet scale.	Accrington.	Leeds.
	Ashton-under-Lyme and Staleybridge.	Liverpool.
	Bacup.	Malton.
	Barnsley.	Manchester.
	Bingley.	Middleton.
	Blackburn	Middlesbrough.
	Bolton	Oldham.
	Bradford	Ormskirk.
	Bury.	Pontefract.
	Burnley.	Prescot.
	Bridlington.	Preston.
	Beverley.	Rochdale.
	Chorley.	Rotherham.
	Clitheroe.	Ripon.
	Colne.	Scarborough.
	Darlington.	Selby.
	Dewsbury.	Sheffield.
	Doncaster.	Skipton.
	Fleetwood.	St. Helens.
	Halifax.	Stockport.
	Haslingden.	Stockton-on-Tees.
	Heywood.	Todmorden.
	Howden.	Ulverstone.
	Huddersfield.	Wakefield.
	Hull.	Warrington.
	Keighly.	Whitby.
	Knaresborough.	Wigan.
	Lancaster.	York.
Surveyed and drawn on the $\frac{1}{500}$ scale.	Devonport and Stonehouse (engraving).	Morpeth.
	Barnard Castle (engraving).	Newcastle-on-Tyne.
	Dover (ditto, nearly completed).	Penrith.
	Durham (do.).	Tynemouth and North Shields (engraving nearly completed).
	Kendal.	

5. Military Surveys.

A large and increasing number of surveyors and draughtsmen have been employed on these surveys during the past year. Twenty-one plans of sites for forts and batteries have been prepared on the $\frac{1}{500}$ scale, with contours at 5 feet vertical intervals, to be used in planning the works, in addition to the surveys on $\frac{1}{2500}$ scale, which have been in progress at Chatham, Dover, Harwich, Isle of Wight, London, Newhaven, Pembroke, Plymouth, Portsmouth, Sheerness, Shoreham, Torbay, and which are constructed on the same system and the same scales as those adopted for the Ordnance Survey of the Kingdom. We have also had parties employed in surveying the Barracks in the London, Aldershot, South West, and other districts, for the War Department.

VIII.

SCOTLAND.

1. Survey on $\frac{1}{500}$ Scale.

The following table shows the progress made in the survey and publication in each county:—

	Area Square Miles.	Surveyed Square Miles.	Published Square Miles.
Ayr	1,149	all	all
Bute	171	6	6
Berwick	473	all	all
Clackmannan	46	all	—
Dumbarton	320	all	—
Dumfries	1,103	all	all
Forfar	889	591	107
Lanark	987	all	521
Linlithgow	127	all	all
Peebles	356	all	all
Perth	2,834	1,303	4
Renfrew	271	all	210
Roxburgh	720	all	235
Selkirk	266	all	all
Stirling	462	all	—

The progress during 1860 was 902 square miles surveyed, of which about 400 square miles only have been laid down on $\frac{1}{2500}$ scale, the remainder being Highland work. The plans of 695 square miles have been published during the year.

2. Six-inch Map.

1. The plans of the following counties have been published on the 6-inch scale :—

	Square Miles.		Square Miles.
Ayr	1,149	Kirkcudbright	882
Edinburgh	360	Linlithgow	127
Fife	504	Peebles	356
Haddington	250	Wigton	451
Kinross	83	Isle of Lewis	700

The engraving of Dumfriesshire and Berwickshire is far advanced, and that of Renfrewshire, Forfarshire, Roxburghshire, and Lanarkshire, is progressing. The publication of the maps of Ayrshire and Peebleshire was completed during the year.

3. One-inch Map.

Area of Scotland, 30,000 square miles.

The number of square miles in sheets published with hills is 2,056, in addition to which there are three sheets, including an area of about 1,200 square miles on the eve of completion.

The engraving of the outline map has been considerably advanced, and is completed for Fifeshire, Kinross-shire, and all the Counties south of Forth and Clyde, with the exception of parts of Lanarkshire, Roxburghshire, and Renfrewshire, which are in hand.

The progress for the year has been 1,222 square miles engraved in outline, and 831 square miles completed with hills.

4. Towns.

Published on $\frac{1}{500}$ or 10-feet scales.	Annan.	Lanark.
	Berwick.	Peebles.
	Greenock.	Maybole.
	Girvan.	Port Glasgow.
	Hawick.	Stirling.
Engraved and published on 5-feet scale.	Ayr.	Kirkcaldy.
	Cupar.	Kirkcudbright.
	Dalkeith.	Linlithgow.
	Dumfries.	Musselburgh.
	Dunfermline.	St. Andrew's.
	Edinburgh.	Stranraer.
	Haddington.	Wigtown.
Surveyed and drawn on the $\frac{1}{500}$ scale.	Airdrie.	Hamilton.
	Alexandria and Bonhill.	Irvine.
	Arbroath.	Kelso.
	Coatbridge.	Kirkintilloch.
	Dumbarton.	Paisley.
	Dundee (engraving).	Perth (engraving).
	Falkirk.	Selkirk.
	Galashiels.	Strathavon.
	Glasgow (engraving).	

The $\frac{1}{500}$ plans of Stirling and Lanark have been published during the present year; also 54 sheets of the plan of Glasgow. A plan of Glasgow on $\frac{1}{2500}$ scale in 10 sheets has also been published during the year.

IX.

IRELAND.

1. Revision of the Maps of the Northern Counties.

The plans of every county in Ireland have been engraved and published on the scale of six inches to the mile, but in consequence of the instructions under which the survey of Ireland was commenced, the plans of the northern counties, which were the first surveyed, were made without that amount of detail which has subsequently been found to be essentially necessary for the local valuation and assessments, and hence it is that we are now revising those northern counties at a great additional expense. In a great part of Ireland there are 50 enclosures to one in Scotland; and the cost of inserting these enclosures only in Ireland has amounted almost to the cost of an original perfect survey in Scotland.

The following counties have been revised :—

Antrim,	Fermanagh,	Tyrone,	Down,
Donegal,	Londonderry,	Monaghan,	Armagh,

and the revision of the County of Louth is in progress.

652 square miles have been engraved and published during the year.

2. Towns.

Dublin has been engraved and published on the 5-feet scale, and the engraving of the plans of Belfast and Portadown is nearly completed.

The following is a list of the towns of which plans have been drawn on the 5-feet scale, but not engraved:—

Antrim.	Dundalk.	Mountmellick.
Armagh.	Dungannon.	Mullingar.
Askeaton.	Dungarvon.	Mountrath.
Athlone.	Ennis.	Naas.
Athy.	Enniskillen.	Navan.
Balbriggan.	Fermoy.	Nenagh.
Ballina.	Fethard.	Newcastle.
Ballinasloe.	Galway.	Newry.
Ballymacarret.	Graigne, Kilkenny.	Newton Stewart.
Ballyshannon.	Granard.	Omagh.
Bandon.	Johnstown.	Passage.
Baltinglass.	Kanturk.	Portarlington.
Belfast.	Kells.	Queenstown.
Birr or Parsonstown.	Kildare.	Rathkeale.
Black Rock.	Kilkenny.	Roscommon.
Booterstown.	Killarney.	Roscrea.
Boyle.	Kilrush.	Sligo.
Bray.	Kingstown and Dunleary.	Templemore
Cahir.	Kinsale.	Thomastown.
Carlingford.	Limerick.	Thurles.
Carlow.	Lisburn.	Tipperary.
Ditto, part called Graigne.	Listowel.	Tralee.
	Longford.	Trim.
Carrick-on-Shannon.	Loughrea.	Tuam.
Castle Bar.	Lucan.	Tullamore.
Cashel.	Lurgan.	Waterford.
Cavan.	Magherafelt.	Westport.
Charleville.	Mallow.	Wexford.
Clonakilty.	Maryborough.	Wicklow.
Clonmel.	Middleton.	Williamstown.
Cork.	Michelstown.	Youghal.
Drogheda.	Monaghan.	

The following towns have been surveyed, and the plans are being drawn on the scale of $\frac{1}{500}$ for the purposes of the valuation:—

Ardglass.	Comber.	Killyleagh.
Balleybay.	Donaghadee.	Lisburn.
Ballynahinch.	Downpatrick.	Monaghan.
Banbridge.	Dromore.	Newtownards.
Bangor.	Gilford.	Portaferry.
Ballymena.	Hillsboro'.	Rathfyland.
Castleblayney.	Holywood.	Warrenpoint.
Clones.	Kilkeel.	

3. One-Inch Map.

Area of Ireland, 32,813 square miles.

No. of square miles engraved in outline	30,244
Do. published with hills	1,429

The progress during last year was 6,619 square miles engraved in outline, and 368 square miles published with the hill features completed.

4. Plans for the Landed Estates Court.

A large number of plans of estates have been made on requisitions from the Judges of the Court, who have expressed their entire satisfaction with the manner in which they have been prepared, and with the cost of their preparation, the whole of which is repaid by the purchasers of the estates.

X.

STATEMENT of the AMOUNTS which will require to be provided in the ESTIMATES for 1861-62 for the ORDNANCE SURVEYS of the United Kingdom and the Topographical Depôt.

	Estimate 1861-62.		Estimate 1860-61.	
(1.)	£	£	£	£
Ordnance Survey of the United Kingdom:				
For the prosecution of the survey in—				
England	21,000		29,000	
Scotland	22,000		30,000	
Ireland	10,000		13,000	
NOTE.—Of this sum about 1,000*l.* is required to meet the expense of surveys made for the Landed Estates Court in Ireland, which will be repaid out of the produce of the sales of estates made under the Court.				
Towards engraving a Geographical Map of Great Britain on the scale of four miles to an inch	1,000		1,000	
Engraving Geological Survey, &c.	600		600	
Publication of the Maps and Levelling	5,500		5,500	
NOTE.—This amount will be covered by the sale of the maps. In the year ending the 30th September 1860, the sum received has been 4,749*l.* 4*s.* 1¾*d.*, which, together with the value of maps supplied to public departments amounting during the same period to 2,494*l.* 4*s.* 11¼*d.*, makes the total value of the maps issued 7,243*l.* 9*s.* 1*d.*				
Survey of Military Stations	4,000		4,000	
Annual Repairs to the Survey Offices at Southampton and Dublin	500		500	
		*64,600		84,600
(2.)				
Topographical Depôt:				
Salaries, extra pay of officers and contingencies, including the purchase of maps and books	5,400		5	
For the purpose of connecting the triangulation of Great Britain with that of Belgium, and for the measurement of an arc of parallel from Valentia in the West of Ireland to Orsk, on the Oural River, in Russia. See Treasury Letter, 22 December 1860, $\frac{7602}{394}$	1,000			
Total £		71,000		90,000

* This reduction in the estimates is principally caused by the employment of a great number of the surveyors and draftsmen upon the surveys required for the purchase of land and construction of fortifications for the protection of the Royal Arsenals and Dockyards, out of the grant for which the cost of the surveys will be taken, viz. £12,000 0 0
And out of the vote for the works at Newhaven and Harwich the cost of the necessary surveys at those places, viz. 1,140 0 0

£13,140 0 0

XI. 1.

DISTRIBUTION of the OFFICERS and MEN, and the Districts proposed to be surveyed next Year, to which the Sums which may be voted will be applied.

1. The distribution of the several officers and divisions of the Survey will indicate the general arrangements I have made, and the districts which will be surveyed next year.

Lieutenant-Colonel Cameron is the executive officer in charge of the general correspondence, and the publication of the maps of Great Britain, at Southampton.

Captain A. R. Clarke has charge of the trigonometrical branch of the work, and of the initial levelling.

Captain A. de C. Scott has charge of the examination and zincographing of the manuscript plans, and of their reduction to the 6-inch and 1-inch scales.

Officers in charge of divisions, and the districts upon which they will be employed:—

England:—Lieutenant Jones (at Carlisle) - - - Cumberland.
Lieutenant Sitwell (at Newcastle-on-Tyne) Northumberland.

England, Military Stations	Major Burnaby (at London)	Environs of the Metropolis.
	Captain James (at Carlisle)	Cannock Chase and Cumberland.
	The Hon. Lieutenant Trench (at Southampton)	Isle of Wight and Coast Defence Surveys.
	Captain Carey (at Southampton)	Coast Defence Surveys.
Scotland:—	Major Bayly (at Glasgow)	Perthshire. Forfarshire.
	Captain Pratt (at Stirling)	Perthshire.
	Captain Martin (at Perth)	Perthshire. Forfarshire.
Ireland:—	Captain Wilkinson has charge of the publication of the maps, and of the office in the Phœnix Park.	
	Captain O'Grady (at Dublin)	Louth. Cavan.

Captain O'Grady will carry on the revision of the counties of Louth and Cavan, and the surveys for the Landed Estates Court.

In England:—The hill drawing, levelling, and contouring is carried on under Lieutenant Jones, who is stationed at Carlisle.

In Scotland:—The same duties are in charge of Captain Stotherd, who is stationed in Edinburgh.

In Ireland:—The hill drawing is executed under the direction of Captain Wilkinson, The hill features of upwards of one-third of Ireland have been sketched.

XII.

RETURN of the Sale of the ORDNANCE MAPS, including the value of those supplied to Public Departments, between the 1st January and the 31st December 1860.

		£	s.	d.
England	1-inch scale	1,757	18	9
	6-inch scale	1,083	9	7½
	1/2500 scale	461	13	2½
	5 and 10 feet plans of towns	203	10	0
	12-inch ditto	121	8	9
	Sundry maps and books	1,309	0	4¼
	Total (including 2,364*l.* 0*s.* 6*d.* to Public Departments)	£4,937	0	8¼
Scotland	1-inch scale	27	10	7½
	6-inch scale	287	11	10½
	1/2500 scale	788	16	2¼
	5 and 10 feet plans of towns	55	18	6
		£1,159	17	2¼
Ireland	1-inch scale	116	18	6
	6-inch scale	1,375	8	9
	5 feet plans of towns	38	17	0
	Sundry Maps, &c.	134	17	2¾
	Total (including 270*l.* 5*s.* 11¼*d.* to Public Departments)	1,666	1	5¾
	Total Amount	£7,762	19	4¼

XIII.

STATEMENT of the PAY and ALLOWANCES chargeable to the SURVEY ITEM of the Officers, Non-commissioned Officers, and Men, of the ROYAL ENGINEERS, attached to the SURVEY DEPARTMENT.

	£	s.	d.
Pay and allowances of 1 lieutenant-colonel, at 30*s.*; 2 brevet majors, at 22*s.* 6*d.* each; 2 first captains, at 18*s.*; 7 second captains, at 13*s.* 6*d.* each; 3 lieutenants, at 11*s.* 9*d.* each; and 1 quartermaster, at 11*s.* 6*d.*	4,603	11	3
Working pay of 94 non-commissioned officers at rates varying from 1*s.* 10*d.* to 4*s.*, and of 276 sappers and buglers, at rates varying from 6*d.* to 2*s.* 6*d.*	9,849	1	4
	£14,452	12	7

XIV.

STATEMENT of the NUMBERS and RATES of PAY of the CIVIL ASSISTANTS and LABOURERS employed on the ORDNANCE SURVEYS, and their Numerical Distribution in the three portions of the United Kingdom.

Rates of Pay.	England.		Scotland.		Ireland.		Total.
	Civil Assistants.	Labourers.	Civil Assistants.	Labourers.	Civil Assistants.	Labourers.	
Above 15*s.* and not exceeding- 19*s.*	5	- -	1	- -	2	- -	8
„ 10*s.* „ „ - 15*s.*	11	- -	- -	- -	3	- -	14
„ 8*s.* „ „ - 10*s.*	16	- -	- -	- -	7	- -	23
„ 6*s.* „ „ - 8*s.*	44	- -	2	- -	18	- -	64
„ 4*s.* „ „ - 6*s.*	108	- -	22	- -	43	- -	173
„ 2*s.* „ „ - 4*s.*	184	275	83	81	41	- -	664
2*s.* and under - - -	67	- -	12	- -	10	36	125
Total - -	*435	275	120	81	124	36	1,071

* The large proportion of assistants employed in England is accounted for by the head quarters of all the Surveys being at the Ordnance Survey Office, Southampton.

The annual charge arising from the pay of the civil assistants and labourers as above enumerated is (approximately)—

Civil Assistants - - - £46,218
Labourers - - - - £13,369

XV.

NUMERICAL and COMPANY DISTRIBUTION of the FOUR SURVEY COMPANIES of ROYAL ENGINEERS, in each portion of the United Kingdom.

——	Staff Serjeants.	Colour Serjeants.	Serjeants.	Corporals.	2nd Corporals.	Buglers.	Sappers.	Total.
		SURVEY OF ENGLAND.						
13th Company - - -	- -	1	2	4	3	1	34	45
14th „ - - -	- -	- -	5	5	3	2	38	53
16th „ - - -	2	- -	2	5	6	1	51	67
19th „ - - -	- -	- -	4	5	5	1	30	45
Total - -	2	1	13	19	17	5	153	210
		SURVEY OF SCOTLAND.						
13th Company - - -	- -	- -	4	2	5	- -	22	33
14th „ - - -	- -	1	2	3	3	- -	22	31
16th „ - - -	- -	- -	1	1	1	- -	15	18
19th „ - - -	- -	- -	1	3	3	- -	32	39
Total - -	- -	1	8	9	12	- -	19	121
		SURVEY OF IRELAND.						
13th Company - - -	- -	- -	1	2	- -	- -	12	15
14th „ - - -	- -	- -	- -	- -	2	- -	9	11
16th „ - - -	- -	1	2	1	- -	- -	2	6
19th „ - - -	- -	1	2	- -	- -	- -	4	7
Total - -	- -	2	5	3	2	- -	27	39
General Total -	2	4	26	31	31	5	271	370

XVI. 1.

TOPOGRAPHICAL AND STATISTICAL DEPÔT.

General Statement of Progress.

The work done in the present year in the Topographical Department has been of a very varied description.

The survey of the barracks and forts in Great Britain and Ireland has been continued, and 92 barracks and forts have been surveyed and drawn, and the lithography of them is in progress. The 3rd volume of the Barrack Manual, containing the forts and barracks in the Dublin district, is nearly ready for publication.

A work containing returns of the strength, organization, equipment, &c. of the armies of Europe, has been published in three volumes, corresponding in size to the Barrack Manual.

Plans have been lithographed for the Foreign Office, Colonial Office, Treasury, Council of Military Education, and different departments of the War Office, and a large number of drawings of military stores have been printed.

Plans, illustrating the movements of the Allied Forces in China, have been published and copies sent to every regiment in the service.

Returns of the equipment of an army in the field have been commenced; they are intended to comprise the number, price, and weight, of every article necessary for the supply of bodies of troops, of different strength and of all arms of the service. These will be tabulated in books prepared for the purpose, and accompanied by drawings of the several articles.

Drawings have been made of the reviews of the volunteers in Hyde Park and Edinburgh before Her Majesty, and will shortly be lithographed and published.

During the past year, an officer of artillery, Major Miller, has been added to the topographical staff, which now comprises an officer of artillery, engineers, and infantry.

XVI. 2.

Topographical and Statistical Department, War Office.

Return showing the Persons employed from the 1st January to 31st December 1860.

Major A. C. Cooke, Royal Engineers, Executive Officer.
Major F. Miller, Royal Artillery, Military Statistics.
Captain Martin Petrie, 14th Regiment, Military Statistics.
1 Serjeant, Royal Engineers, in charge of accounts, and General Superintendence.
1 1st Corporal, Royal Engineers, miscellaneous Office duties.
1 2nd Corporal, Royal Engineers, attending to sale of Ordnance survey plans.
2 Assistant Clerks.
1 Librarian.
1 Translator.
10 Draughtsmen and Lithographers.
1 Lithographic Writer (writing forms, circulars, &c., for transfer).
3 Lithographic Printers.
2 Pressmen.
2 Stone Grainers and Cleaners.
4 Lithographic Form Printers,—Printing circulars, returns, &c.
1 Office Messenger.

XVI. 3.

Topographical and Statistical Department War Office.

Works executed from 1st January to 31st December 1860.

Drawing in Water Colour.

Volunteer Review, Hyde Park, Drawing of.

Volunteer Review, Edinburgh, Drawing of.

Drawing for Lithography.

Barracks—South-western District.
Plans of Anglesea, New Gun Wharf, Winchester, Christ Church, Clifford Fort, Colewort, Priddy's Hard, Victoria, Sandown, Gomer, Cumberland, Fort Elson, Freshwater Gate, Gosport, Haslar, Clarence, Hilsea, Calshot Castle, Chichester, Dorchester, Block House Fort, Forton, Monckton Fort, Point Battery, Hurst Castle, Albany, Sandown Fort, Yarmouth Castle, Milldam, Littlehampton Fort, Old Battery, Marchwood, Portland, Cambridge, Garrison Hospital, Portsmouth, Old Gun Wharf, Southsea Castle, Southampton, Tipner, Trowbridge, Weymouth.
Do.—South-eastern District.
Plans for Pocket Manual.
Colchester Camp (3 Plans).
Brighton, Cavalry and Infantry.
Do.—London District.
Albany, Knightsbridge, Tower, Hyde Park Magazine, and Barracks, Wellington.
Do.—Dublin District.
Beggar's Bush, Infirmary, Linen Hall, Portobello, Richmond.
Do.—Aldershot.
Permanent Buildings (8 Plans).
Barrack Stoves, Plans of.
Batteries, Plans and Sections of, for Rifle Volunteers.
British Columbia, Sketch of, by Lieut. Mayne, R.N.
———, by Lieut. Palmer, R.E.
China, Sketches of Actions in, by Captains Brabazon and Allgood, and Colonel Wolseley, and Plan of Route of Allied Armies from Gulf of Pe Chili to Pekin.
Chinese Weights and Measures, Tables of.
Colchester Camp, Plans of.
Engineer Equipment, Drawings of.
Enniskillen Castle, Plan of Siege of.
European Armies, Manual of, with Maps of German States, Russia, France, Austria, Spain, and Italy.
Floating Target, Plan of.
Hills, Drawings of, for Royal Military Colleges.
———, for Council of Military Education.
Irish Maps in British Museum, Copies of.
Italian Campaign, Maps and Plans to illustrate Major Miller's Work on.
Lahore, Plan of.
Machine Crutches, Drawings of.
Martello Tower, No. 71, Plans, Sections, and Drawings of.
Meteorological Observations, Instructions for taking, Illustrations for.
Montenegro, Map of.
New Zealand, War in, Plans to illustrate.
Norfolk Island, Map of.
Pekin, Maps of.
Peninsular Campaign, Maps to illustrate.
Raised Racers, Plans of.
Rifle Range, Plan of.
Royal Laboratory, Woolwich, Drawings for.
Sentry Boxes, Plans of.
Shrapnell Shells, Drawings of.
Telegraphic Lines in Europe, Map of.
Telegraphic Line between Constantinople and Bussorah, Plan of.
Vancouver Island Colony, Maps of 9 Districts in.
World, Map of.

Printing.

	No. of Copies.
Barracks—South-western District.	
30 Copies each of 41 Plans for Atlas	1,230
50 Copies each of 41 Plans for Manual	2,050
Barrack Stoves, Plans of	210
Batteries for Volunteers, Plans and Sections of	1,038
British Columbia, Map of	30
———, Sketch by Lieut. Mayne, R.N.	122
———, Sketch by Lieut. Palmer, R.E.	220
China, Sketches of Actions in by—	
Captain Allgood	322
Captain Brabazon	1,909
Colonel Wolseley	658
———, Plan of Route of Allied Armies	550
Chinese Weights and Measures, Tables of	280
Colchester Camp and Middlewick, Plan of	100
Enniskillen Castle, Plan of Siege of	55
Europe, Map of, showing Coal Fields	80
European Armies, Manual of	150
———, Map of German States to accompany	150
Floating Target, Plan of	507
Hills, Drawings of, for Royal Military Colleges	600
Hills, Drawings of, for Council of Military Education	500
Italian Campaign, Maps and Plans to illustrate Major Miller's Work on	21,000
Martello Tower, No. 71, Plans, &c. of	5,040
Montebello, Plan of Action of	23
New Zealand, War in, Plans to illustrate	150
Norfolk Island, Map of	100
Pekin and Environs, Map of	200
Pekin, Map of City of	200
Raised Racers, Plans of	202
Rifle Range, Plan of	340
Royal Laboratory, Woolwich, Drawings for	18,242
Royal Engineers' Report on the Siege of Sebastopol, Plans to accompany	722
Sentry Boxes, Plans of	200
Shell Practice, Diagrams of	122
Shrapnell Shells, Drawings of	514
Telegraphic Lines in Europe, Map of	120
Telegraphic Line between Constantinople and Bussorah, Plan of.	
Vancouver Island Colony, Map of 9 Districts in	2,790

Printing in Colours.

	No. of Copies.		No. of Copies.
Meteorological Report, by Sir Henry James, R.E. Illustrations for 310 Sets - - -	5,890	velle, Vera, Sabugal, St. Sebastian, Badajoz, Vimera, Busaco, Vittoria, Ciudad Rodrigo, Almeada, Salamanca, Redinha, Fuentes d'Onoro, Delhi, Waterloo, 1st, 2nd, and 3rd periods - - - - - - - -	9,728
Italian Campaign, Work on, Maps and Plans to illustrate - - - - - -	8,750		
History of 52nd Regiment, Maps and Plans to illustrate, viz., Seringapatam, Orthes, Ni-			

Tracing for Record.

Asia, Central, Russian Map of.

Shorncliffe Camp, Plan of.

WORKS IN PROGRESS.

Drawing for Lithography.	Printing.
Barracks in South-Eastern District, plans of.	Barracks in South-Eastern District.
Barracks in South-Eastern District, for Manual, plans of.	Barracks at Aldershott.
Barracks in London District, plans of.	Barracks in Ireland.
Barracks in Ireland, plans of.	Barracks in London District.
Peninsular Battles, maps of.	Lahore, plan of.
Illustrations of Crimean War Stores.	Montenegro, plan of.
Drawings of Volunteer Review, at Hyde Park.	Peninsula Campaign, maps and plans of.
Drawing of Volunteer Review at Edinburgh.	Plans to accompany the Royal Engineer Report of the Siege of Sebastopol.
Drawings of Hills.	ngs of Artillery Stores for Royal Laboratory, olwich.
Total Cost - - -	£3,583 1*s.* 7*d.*

Return of Forms, Circulars, and Returns printed from 1st January to 31st December 1860.

Name of Department supplied.	Number printed.	Remarks.
War Office - - - -	47,739	Beating Orders, Letters, Circulars, Warrants, and Forms,
Adjutant-General's Office - -	84,233	Circulars, Diagrams, Forms, Returns, &c.
Army Medical Department - -	2,067	Circulars, Forms, Letters, &c. &c.
Royal Military Asylum, Chelsea -	8,400	Ditto ditto.
Commander-in-Chief - -	21,220	Ditto ditto.
Council Office - - -	1,800	Ditto ditto.
Engineer Department - - -	720	Ditto ditto.
Home Office - - - -	22,737	Warrants, Circulars, Letters, &c.
Inspector-General of Cavalry - -	112	Letters, ditto.
Judge Advocate General - - -	500	Ditto ditto.
Paymaster-General - -	21,060	Account Forms, Letters, and Circulars.
Quartermaster-General - -	84,897	Routes, Returns, Circulars, Forms, &c.
Recruiting Department - - -	16,420	Circulars, Returns, Forms, &c.
Topographical Department - -	16,504	Ditto ditto ditto, Envelopes.
Total - - -	328,409	

XVI. 4.

Return of Maps, Plans, and Books added to the Library of the Topographical Depôt during the Year 1860.

Return of Maps and Plans added to the Topographical Depôt (not including those presented) between 1st January 1860 and 31st December 1860.

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Political Map (2nd edition)	1	1/7480680	2
Telegraphic Map	1	1/3738240	1
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Triangulation of Great Britain and Ireland	1	1/1520640	1
England	2	1/63360	1
England and Wales (Parliamentary Reform Map)	1	1/1300000	1
Counties.			
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Durham „	10	1/10560	1
Essex „	1	1/63360	1
Hampshire „	25	1/2500	1
Hampshire and West Sussex	1	1/63360	1
Kent	1	„	1
Lincoln and Rutland	1	„	1
Pembrokeshire	1	„	1
Towns.			
Dover (Town of)	11	1/500	1
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London	1	1/528	1
„ Environs of	1	1/63360	1
„ 30 miles round	1	1/1521000	1
„ Jewel House in Tower	2	1/96	1
Manchester	1	1/10560	1
Newcastle-on-Tyne	1	1/3420	1
Plymouth	16	1/5280	1
Ditto	21	1/500	1
Barracks, &c.			
Carlisle Castle	1	1/500	2
Eastbourne Tower (Practice against)	4	„	1
Isle of Man (Railway)	1	1/105600	1
Newcastle Barracks	1	1/500	2
Sunderland Barracks	1	1/528	2
Tamar, Bridge over (Photo.)	1	„	1
Scotland.			
Scotland	4	1/63360	1
Counties.			
Ayrshire, County	26	1/10560	1
Berwickshire	2	1/10560	1
Dumfriesshire	12	1/10560	1
Fife and Kinross	2	1/63360	1
Peeblesshire	12	1/10560	1
Towns, &c.			
Edinburgh	1	1/10560	1
„ environs	1	1/253440	1
„ roads and streets M.	1	1/6336	1
„ Mil. Sur. of roads M.	1	1/2376	1
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Inch Colm M.	1	1/1584	1
Inch Keith M.	1	1/31680	1
Pinkie and Preston Pans, site of the battles of	1	1/10560	1
Thurso (Proposed harbour) M.	1	1/4752	1
Ireland.	54	1/63360	1
Dublin, City of	1	1/5000	1
European Colonies.			
Corfu, Attack in 1716 M.	1	1/6400	1
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Gibraltar, Straits of	1	1/194000	1
„ Attack, 1704 M.	1	1/8000	1
„ Plans of P. & M.	250	Various.	1
Malta, Fort Tigne. Profile M.	1	1/360	1
Austria.			
Olmütz, Fortifications of	1	1/9100	1
„ Siege of M.	1	1/8928	1
Pisek, Position before	1	1/13000	1
Belgium.			
Antwerp Town	1	1/29337	1
Brussels City	1	1/5000	1
Cisoin, Camp at M.	1	1/38000	1
Fontenoy, Battle of	1	1/28000	1
Furnes Town	1	1/7548	1
„ „	1	none	1
„ Attack, 1744	1	„	1
Jenmapes, Battle	1	1/12500	1
Liege Town	1	1/7700	1
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„ „ 1746 - -	1	1/6900	1
Namur, Siege, 1695 - -	1	1/9000	1
„ „ - -	1	1/12270	1
Nerwinde, Battle, 1693 -	1	1/13000	1
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Belleisle, Citadel - -	1	1/3000	1
Bergues Town - -	1	1/8000	1
Bescançon Town - -	1	1/5159	1
Betune Town - -	1	1/3081	1
Bouchain, Attack, 1711 M.	1	1/7200	1
Boulogne Town - -	1	1/7300	1
Brest Roads - - -	1	none	1
Brissac Town - - M.	1	„	1
Cambray, Arrond. of -	1	1/177000	1
Cassel, Part of - -	1	1/7000	1
Cherbourg, Harbour -	1	1/13000	1
Compiègne Forest - -	1	1/26400	1
Condé Town - - -	1	1/5000	1
Dieppe „ - - -	1	1/8470	1
Douay „ - - M.	1	none	1
„ „ - - M.	1	1/12320	1
Dunquerque Town - -	1	1/11000	1
„ „ - -	1	1/15400	1
Grenelle, Champ de Mars M.	1	none	1
Guadeloupe (Fort Royal) M.	1	1/2100	1
Hagnaue Town - -	1	1/3000	1
Hedic Castle - - -	1	none	1
Lavcate, Attack - -	1	„	1
Lens, Battle, 1648 - -	1	„	1
Lille, Town and Citadel -	1	1/7315	1
„ „ „ -	1	none	1
„ Town - - -	1	1/7701	1

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Louis (Fort), Attack near M.	1	1/28000	1
Metz Town - - M.	1	1/20000	1
„ „ - - M.	1	none	1
Mont Louis, Fortress - M.	1	1/2100	1
Niort, and Environs - M.	1	1/13000	1
Oleron, Town - - M.	1	none	1
Paris City - - -	1	1/15400	1
Ré, Isle de (Citadel) M.	1	1/8000	1
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Strasbourg „ - -	1	1/10000	1
St. Germain, L'Auxerrois, parish - - - -	1	1/2700	1
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„ „ West -	1	1/3500	1
St. Jean de Luz, Bay -	1	1/7315	1
St. Malo, Environs -	1	1/60000	1
„ Town - -	1	1/4168	2
Taisniere, Battle, 1709 M.	1	1/24000	1
Thionville Town - M.	1	1/3311	1
„ Siege, 1643 -	1	none	1
Toulon Roads - - M.	1	„	1
Toulouse, Promonade of M.	1	„	1
Valenciennes, Attack, 1793 M.	1	„	1
Vaugirard, Mill of - M.	1	„	1
„ Quarries of M.	1	„	1
GERMANY.			
Cassel, Camp at - -	1	1/34000	1
Ems, Course of - M.	1	none	1
Ebenhausen, Camp, 1760 M.	1	„	1
Frankfort, Town of - -	1	„	1
Freyburg, Attack, 1744 M.	1	„	1
„ Attack and covered ways M.	1	1/850	1
Hailbron - - - -	1	1/6160	1
Hanau Town - - M.	1	1/6000	1
Hesse Cassel - - -	40	1/60000	1
Hesse Darmstadt - -	31	1/60000	1
Jena, Battle - - -	1	1/178000	1
Mayence Town - -	1	1/15400	1
Maynz - - -	1	1/20000	1
Philippsbourg, Attack in 1744 - - - M.	1	1/18000	1
„ „ 1644 -	1	none	1
„ Camp at, 1734 M.	1	1/18000	1
Rheinfels Town - -	1	1/12000	1
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Italy, Post and Road Map	8	$\frac{1}{864000}$	3
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Sicily, Island of - -	1	$\frac{1}{519210}$	4
NETHERLANDS.			
Netherlands, Kingdom of -	19	$\frac{1}{50000}$	1
Bathz and Environs - M.	1	$\frac{1}{31680}$	1
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„ Plans and Sections - - - M.	43	various	1
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Luxembourg, Town - M.	1	$\frac{1}{3800}$	1
„ „ - -	1	$\frac{1}{3330}$	1
„ New Works	1	$\frac{1}{10000}$	1
Lutzelburg, Battle, 1758 -	1	$\frac{1}{28000}$	1
Maestricht, Town - -	1	none	1
„ Attack, 1748 -	1	$\frac{1}{7300}$	1
Walcheren, Island - -	1	$\frac{1}{34700}$	1
PORTUGAL.			
Abrantes, Position of M.	1	$\frac{1}{6012}$	1
Almeida, Town - M.	1	$\frac{1}{5400}$	1
Barossa, Action near M.	1	$\frac{1}{18000}$	1
Busaco, Battle, 1810 -	1	$\frac{1}{31680}$	1
„ „ - -	1	$\frac{1}{37600}$	1
Campo Mayor, Town M.	1	$\frac{1}{10780}$	1
Elvas, Fortifications - M.	1	none	1
„ Citadel - - M.	1	„	1
Fayal, Island - - M.	1	„	1
Galiza, Ground near - M.	1	$\frac{1}{19000}$	1
Juliaõ, Fortress - M.	1	$\frac{1}{700}$	1
Jurumeña „ - M.	1	$\frac{1}{924}$	1
Leira, Ground near - M.	1	$\frac{1}{10800}$	1
„ „ - M.	1	none	1
Lisbon, Country round -	1	$\frac{1}{95040}$	1
„ Lines of defence M.	1	$\frac{1}{4902}$	1
Melgaço, Town - M.	1	none	1
Monsao, Fortress - M.	1	„	1
Peniche - - - M.	1	$\frac{1}{10000}$	1
„ Part of Works M.	1	$\frac{1}{3280}$	1
„ Lines of - M.	1	none	1
Santarem to Lisbon, ground - - - M.	1	$\frac{1}{12000}$	2
Sombral, Ground near M.	1	$\frac{1}{21120}$	1
Tagus, near Salvatarra M.	1	$\frac{1}{21120}$	1
„ Bridge of Boats, Abrantes - - M.	1	$\frac{1}{3000}$	1
Torres Vedras, Lines of M.	1	$\frac{1}{31680}$	2
Vimiera, Battle, 1800 -	1	$\frac{1}{10840}$	1
Zezere, with Tejo, Junction of - - - M.	1	$\frac{1}{10560}$	1
PRUSSIA.			
Berlin, City - - -	1	$\frac{1}{61000}$	1
„ „ - - -	1	$\frac{1}{12000}$	2
„ Attack, 1757 - M.	1	none	1
Bonn, Town - - -	1	$\frac{1}{9400}$	1
Breslau, Town - - M.	1	$\frac{1}{9600}$	1
„ „ - - -	1	$\frac{1}{10360}$	1
Coblenz and St. Hermanstein - - - M.	1	none	1
„ fortifications M.	1	$\frac{1}{19825}$	1
Crevelt, Battle - M.	1	$\frac{1}{72000}$	1
Custrin, Town - M.	1	$\frac{1}{4083}$	1
Dusseldorf, Town - -	1	$\frac{1}{8000}$	1
Gueldres, Town - -	1	$\frac{1}{4000}$	1
Koblenz, Town - - -	1	none	1
Koln, Town - - -	1	$\frac{1}{13700}$	1
Moselle, near Trarback M.	1	$\frac{1}{5400}$	1
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Ober Ustingen, Camp M.	1	$\frac{1}{45000}$	1
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Duna, Course of - -	1	none	1
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Buffalora, Demolition of Bridge, View - -	1	—	1
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„ - - - M.	1	1/4680	1
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Leipzig, Town - - -	1	1/6000	1
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Balcarotta, Castle - M.	1	1/462	1
Barcelona, Fortress - -	1	1/9000	1
Burgos, Fort - - -	1	none	1
„ Attack in 1812 M.	1	1/1800	1
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„ Bay and Environs M.	1	1/22000	1
„ Environs and Forticications - - M.	9	various	1
Carthagena, Town - M.	1	1/13800	1
Castel Ciutad, Siege, 1719 M.	1	none	1
Fontarabie, Environs -	1	none	1
Fluera River and Bay of Rosas - - - - M.	1	1/82000	1
Gironne, Attack - M.	1	1/3300	1
Leon, Island, Cadiz - M.	1	1/13800	1
Lerida Castle - - M.	2	1/2000	1
Madrid, Division of - -	1	1/11808	1
„ „ - -	1	1/16400	1
Mahon, Castle of St. Felipe	1	1/6400	1
Minorca, Ciudadella, and Environs - - M.	1	none	1
„ Various Plans P. & M.	32	various	1
Olivenza, Fort - M.	1	1/3600	1
„ „ - - M.	1	1/4392	1
Placensia, Bridge of Almarez - - - - M.	1	none	1
Salamanca, Attack - M.	1	1/3136	1
Sancti Petri, Castle (near Cadiz) - - - M.	1	none	1
San Sebastian, Town M.	1	1/2700	1
„ „ - M.	1	1/4700	1
Suazo Bridge - - M.	1	none	1
Talavera Action - M.	1	„	1
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Switzerland, Part of Frontier - - - - M.	1	1/31000	1
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Constantinople, Photographic Views - -	22	—	1
Danube, Mouths of - M.	2	none	1
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Central Asia, Mountain Ranges - - -	1	1/21000000	1
TELEGRAPHIC.			
India and Europe, Telegraphic Routes between-	1	none	2
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Constantinople to Bussorah, part of the line - -	1	1/63360	2
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Burmese Stockade, Plan of	1	none	1
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City of Siam - - M.	1	none	1
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Sinope, Fortress of - -	1	—	1
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Marocco, copied by the anastatic process from the French Map - -	2	1/1500000	1
Marocco - - - - -	1	1/2400000	1
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„ Route from New Winchester to Fountain	1	1/15840	2
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„ Comaiken „ -	1	1/15840	2
„ Cowichan „ -	1	„	2
„ Cranberry „ -	1	1/31680	2
„ Lake „ -	1	1/15840	2
„ Mountain „ -	1	1/31680	2
„ Quamichan „ -	1	1/15840	2
„ Shawnigan „ -	1	„	2
„ Somenos „ -	1	„	2
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Navy Island - - M.	1	none	1
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Philadelphia City - -	1	1/10560	1
Savannah, Attack of M.	1	1/13200	1
Vermont, State of - -	1	1/277000	1
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Porto Bello, Bay and Town of - - - - M.	1	1/30000	1
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Observations to accompany the Map of the Shadow Path thrown by the Total Eclipse of the Sun on the 18th July 1860, across the North-east part of Spain. C. Vignoles - - -	1	C. Vignoles, Esq., C.E.
On the Figure of the Earth. Capt. Clarke, R.E. - - - - - - -	1	Capt. Clarke, R.E.
Practice of Navigation and Nautical Astronomy. Lieut. H. Raper, R.N. -	2	L. C. Bailey, Esq., R.N.
Report of the Progress of the United States Coast Survey for 1857. American Government - - - - -	1	American Government.
On the Roman Camp at Ardoch. Col. Sir H. James - - - - - -	1	Col. Sir H. James, R.E.
On the Distribution and Productiveness of Taxes. L. Levi, Esq. - - -	1	L. Levi, Esq.
Livre de Poste de Royaume de France -	1	Mr. Kiddle, War Office.
Report explanatory of a Map of the Telegraph Wires of the Ottoman Empire. Lieut. Col. Biddulph - - - - -	1	Lieut.-Col. Biddulph, R.A.
Catalogue of the MSS. Maps, &c. in the British Museum - - - - -	2	British Museum.
Catalogue of the Maps in George III. Collection in the British Museum -	2	Ditto.
Catalogue of the Maps in the American State Libraries - - - - - -	2	American Government.
Occasional Papers of the R.A. Institution - - - - - - Nos.	21	R. A. Institution.
Proceedings of the Royal Geographical Society - - - - - - Nos.	4	R. G. Society.

XVII.

OFFICE BUILDINGS.

The Survey offices both at Southampton and Dublin are in good repair, and have been fitted with every convenience necessary for the advantageous prosecution of the work.

Ordnance Office.
Southampton, 14th February 1861.

HENRY JAMES,
Colonel, Royal Engineers.

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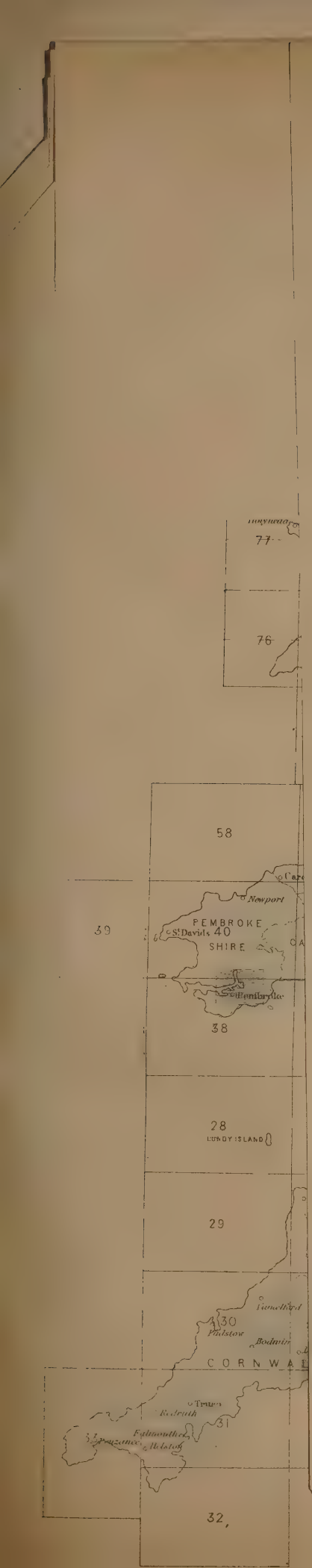
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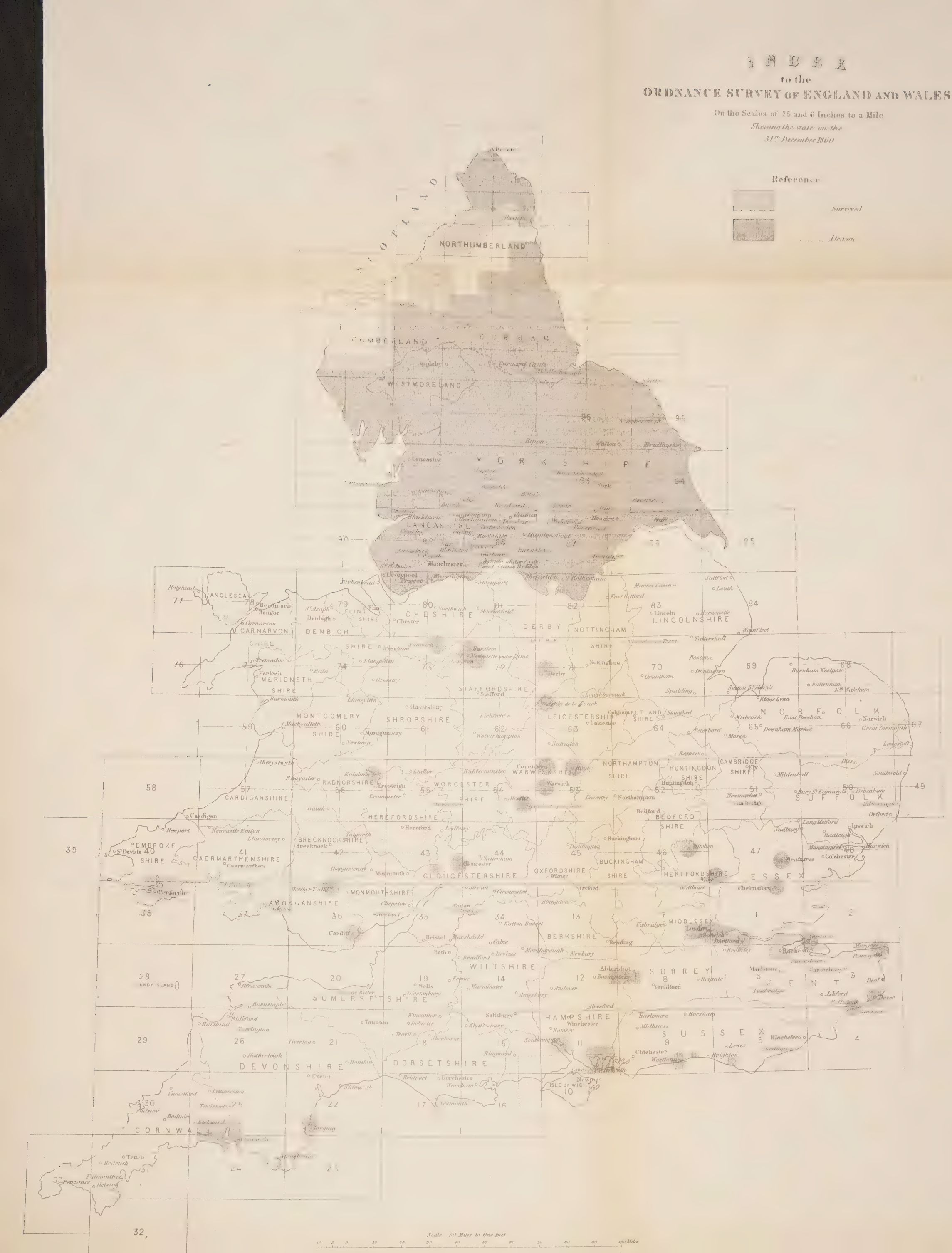

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REFERENCE

The portions lettered a,b,c,d,e,f,g,h,i,j,k,l, *belong to* CROMARTY

" m " NAIRN

" n " INVERNESS

" o p. " BANFF

" q " DUMBARTON

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KINTYRE

DUMFRIES

KIRKCUDBRIGHT

WIGTON

REFERENCE

The portions lettered a.b.c.d.e.f.g.h.i.j.k.l. *belong to* CROMARTY

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Clare Is.
Achill Island
Inishturk
Inishbofin
Mayo
Castlebar
Roscommon
Elphin
Boyle
Longford
Granard
Ballinamore
Leitrim
Carrick on Shannon
Lough Allen
Lough Erne
Enniskillen
Belturbet
Cavan
Kells
Navan
Trim
Drogheda
Dublin
Howth
Ireland's Eye
Lambay Island
Skerries
Balbriggan
Rush
Malahide
Swords
Clontarf
Kingstown
Dalkey
Dublin Bay
Howth Head
Ballsbridge
Donnybrook
Rathmines
Rathfarnham
Tallaght
Lucan
Clondalkin
Chapelizod
Blanchardstown
Finglas
Glasnevin
Drumcondra
Phoenix Park
Kilmainham
Inchicore
Crumlin
Dundrum
Stillorgan
Kingstown Harbour
Dalkey Island
Howth Harbour

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to the
ORDNANCE MAP OF IRELAND
Published on a Scale of One Inch to a Mile
Showing the progress to
31st December 1860

Reference

Engraving

Published in Outline

— Do — with Hills . .

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123

TWENTY-SECOND REPORT

OF THE PROCEEDINGS OF THE

GENERAL BOARD OF DIRECTORS

OF

PRISONS IN SCOTLAND

TO THE

RIGHT HON. SIR GEORGE CORNEWALL LEWIS, BART., M.P.,

ONE OF HER MAJESTY'S PRINCIPAL SECRETARIES OF STATE;

Being Concluding Report by the Directors and Supplementary Report by the Managers appointed under the Prisons (Scotland) Administration Act, 1860.

Presented to both Houses of Parliament by Command of Her Majesty.

EDINBURGH:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY THOMAS CONSTABLE.

1861.

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CONCLUDING REPORT

BY

THE GENERAL BOARD OF DIRECTORS OF PRISONS IN SCOTLAND.

To be communicated to the Right Honourable Her Majesty's Principal Secretary of State for the Home Department.

General Board of Prisons,
Edinburgh, 31*st December* 1860.

Sir,

By the Act, c. 105, of the last Session of Parliament our functions and our existence as a Board come to a close at the end of the present year. We therefore deem it necessary, before the usual period, to report to you our proceedings since 1st January 1860.

Our practice has been, in terms of section 8 of the Act 2 and 3 Vict. c. 42, to make and transmit to you, 'on or before the 15th day of February,' our Report of our proceedings during the preceding year. 2 & 3 Vict. c. 42, § 8.

By the new Act, however, this, with all the other enactments of the existing Acts, is repealed 'from and after the thirty-first day of December 'current.' It is at the same time enacted, that 'it shall be the duty of the 'Managers, and they are hereby authorized and empowered, to bring to 'completion all matters and proceedings left by the General Board of Di- 'rectors of Prisons uncompleted at the commencement of this Act.' 23 & 24 Vict. c. 101, § 5.

It appears to us that we shall most effectually carry out the intention of the Legislature by setting forth the several proceedings which have been begun or been accomplished by us during the year, leaving it to the Managers under the new Act to bring our Report to completion in terms of the above clause, by making up the accounts of receipt and expenditure for the year, and setting forth those other particulars which, not coming to completion until the end of the year, cannot be reported upon at an earlier period. We farther consider it proper on this occasion to give a brief outline of the progress of Prison Management and Discipline under the administration of the Board, since it came into existence a little more than twenty-one years ago, so as to afford a general indication of the large body of transactions recorded in the twenty-one Reports already presented by us.

The present Report will therefore contain :—

1*st*, An account of our Proceedings during the present year.
2*d*, An outline of our Proceedings during the preceding twenty-one years.

I.—OUR PROCEEDINGS DURING THE PRESENT YEAR 1860.

Establishment of County Boards.

In terms of section 10 of the original Statute, in the month of March we framed the usual establishment of County Boards for the year, and divided the members of each Board between the landward and burghal parts of the County.

Apportionment of Assessments to Burghal and Landward population.

In terms of the Statutes, we apportioned between the landward and burghal parts of Counties the sums estimated for by us in our last Report, and approved of by you, and also the sums fixed by County Boards for the current expenses of Local Prisons. As the criterion of this apportionment, we continued to adopt the table of population, of which an account is given in our Fifteenth Report, with the following exceptions:—

Reduced estimate of Population of Burghs in Counties of Ayr, Edinburgh, Linlithgow, and Fife.

We gave effect, under Section 22 of 7 & 8 Vict. c. 34, to arrangements for reducing the estimate of the population, and consequently the amount of the assessment, in certain burghs in the counties of Ayr, Edinburgh, Linlithgow, and Fife, for the particulars of which we refer to our Sixteenth, Eighteenth, and Twentieth Reports.

Relief to Counties of maintenance of certain classes of Convicted Prisoners.

We transmitted to the Remembrancer in Exchequer the usual Accounts rendered by the County Boards, for the expense of maintaining certain classes of convicted prisoners in the Local Prisons, in order that the sums so expended might be repaid to the County Boards, from the Parliamentary Grants for that charge.

Removals of Prisoners.

The removals of convicts from local Prisons to the several Convict Establishments, in terms of your warrants, and the removals of other prisoners from one Prison to another in Scotland, were carried out by County Boards under our regulations and directions.

Returns of Discipline, &c.

Statistics of Expense of Local Prisons.

In the month of August we obtained from County Boards and the Governor of the General Prison the usual Returns of Statistics of Prisons for the year ending in June. These embrace, 1*st*, Returns relating to the several classes of prisoners—to their discipline and conduct, their sentences, previous imprisonments, ages, state of education, health, and other similar matters. 2*d*, Returns of the financial affairs of the Prisons, containing details as to the cost of the various departments in each Prison, under the respective heads of Salaries, Furniture, Diet, Clothing, Bedding, Lighting, Fuel, and Contingencies, with a statement of the value of the work performed by prisoners, and estimates of their gross and nett cost per head with reference to the averages of previous years. We have left these documents to be dealt with by the Managers under the new Act, with the view of their completing this Report.

Proposed alteration of Rule as to Guard Beds.

We received a communication from Sir John Kincaid, Her Majesty's Inspector of Prisons, intimating his opinion that the use of the Guard-bed in Prisons ought to be limited to convicted Prisoners whose terms of sentence do not exceed three calendar months. This proposal involves an alteration of Rule 93 for Prisons in Scotland, which requires that every prisoner not exempted on account of health must, during the first month of his sentence, sleep on a wooden guard bed, furnished with a wooden pillow. When this matter came before us for consideration on the 19th of November, we directed a return to be made by the Governors and Surgeons of all the Prisons, setting forth their experience of the working of hard labour and the guard bed, according to a form which had been before adopted at intervals, adding, on this occasion, a special inquiry in reference to Sir John's proposal. We shall append a digest of these returns, and the matter will fall to be dealt with by the Secretary of State under the new Act.

GENERAL PRISON.

Works at the General Prison.

There have been no additions to the General Prison during the year. The building of the houses for ten male warders, referred to in our last Report, has not been begun, and no further steps have been taken regarding them. We have always been desirous, both for the security of the Prison, and the encouragement of order and good conduct among the officers themselves, that they should reside on the premises, and it will lie with our successors in the

management to decide whether they will give effect to these views by carrying out the proposed addition..

Some late occurrences, none of which have fortunately ended fatally, have led us to the conclusion that it is expedient to run wire fences along the faces of the galleries from each balustrade to the roof above it, and we have suggested that a sum to meet this service should be included in the estimates for the ensuing year.

Discontinuance of the Juvenile Department.

We have mentioned in our two former Reports the gradual decrease of the inmates of the Male Juvenile Department. It included prisoners whose age at commitment did not exceed fourteen, and those between fourteen and eighteen, for whom the Governor and Surgeon considered the discipline of the department to be peculiarly suited. We have now discontinued this department as one requiring a separate edifice and staff of officers. Its inmates have been drafted into the main Prison, where the discipline which, after long experience, we still believe to be the most appropriate to their years will continue to be applied to them so far as circumstances permit. An edifice containing 58 dormitories is thus rendered available for other purposes. When we directed the estimates for the building of this department to be prepared on 5th December 1855, the number of juveniles in the Prison amounted to 47, and was occasionally greater. The following table of the numbers of this class at the conclusion of the several quarters since that time, will afford an interesting illustration of the effect of Reformatories, and of other causes tending to diminish the number of juvenile inmates of Prisons :—

March	1856,	. .	53	September	1858,	. .	14
June	„	. .	38	December	„	. .	16
September	„	. .	33				
December	„	. .	36	March	1859,	. .	16
				June	„	. .	15
March	1857,	. .	35	September	„	. .	14
June	„	. .	32	December	„	. .	12
September	„	. .	28				
December	„	. .	29	March	1860,	. .	8
				June	„	. .	7
March	1858,	. .	23	September	„	. .	5
June	„	. .	18	December	25, „	. .	4

Remissions of Convicts' Sentences.

There have been no further changes in the discipline and general management of the Prison since we last reported on them, except that certain female convicts have been released on license, before the expiry of their sentences, in terms of the arrangement adopted by the Secretary of State for thus abbreviating the periods of punishment of those whose conduct, while in Prison, has been so satisfactory as, in his opinion, to entitle them to this indulgence. On the 12th of January last, you communicated to us two scales containing the largest period of remission which could be thus deducted from each period of sentence awarded,—the one scale referring to sentences of transportation, and the other to sentences of penal servitude. In the same communication you were pleased to express a desire ‘ that the recommendations ‘ for the grant of licenses to convicts in Scotland, and the issue of such licenses,’ should be made through this Board. Certain recommendations for license have consequently been transmitted to you by us, and the licenses have been issued, with instructions to liberate the convicts at the proper period applicable to each.

Medical Department.

There has been no important change in the staff since we last reported, except in the medical department. This formerly consisted of a visiting physician, at £200 a year, and a resident surgeon at £200 a year. Since the death of Dr. Malcom, the visiting physician, in 1859, Mr. Thomson, the resident surgeon, has performed all the duties of the medical department. Having taken into consideration his services, the condition of the department, and the recent increase in the number of prisoners, we resolved, in November last, to raise his salary to £300, with the stipulation that this sum shall include the remuneration of a substitute during any temporary absence. We did not consider it expedient to fill up the office of visiting physician, or to take any further steps for the adjustment of the medical department.

The usual reports by the officers of the General Prison, statistical tables, and other pieces of information which are only completed at the conclusion of the year, will, we presume, be communicated to you by our successors in the management of the Prison.

LOCAL PRISONS.

Escapes.

The following three escapes from local prisons have, down to this period, been reported to us. Each of them was fully investigated.

On the 26th of April, an untried male prisoner escaped from the prison of Wick. He was taken to the yard to perform a prison service, and while the keeper was locking the door behind, he went round a corner, and there found a plank which enabled him to climb on a low outhouse abutting against the wall, whence he descended. He was speedily retaken. Having consulted Her Majesty's Inspector, we brought under the notice of the County Board the propriety of removing the outhouse, and more strictly enforcing the rules, which require prisoners, when out of their cells, to be closely attended by an officer, and the prison premises to be kept clear of loose planks.

On the 1st of June, a convict sentenced to ten years' penal servitude escaped from the prison of Nairn. The Governor of the prison had omitted to report his case to the Secretary of State, so that he was left longer than is usual in the local prison. It happened that the County Board had seen him, and specially examined his cell, with a view to its security, on the day before his escape, which he accomplished before three o'clock next morning, by means of an iron scraper and a tin plate, with which he removed a flag, dug a hole in his cell, and thence tunnelled through to the outside of the prison wall. The County Board's attention was drawn by us, to the better securing of the cell and the necessity of closer attention to the rules for preventing prisoners from obtaining instruments to facilitate escape.

On the 25th of August, a female prisoner escaped from the prison of Lerwick, in Shetland, by taking advantage of a brief interval in which she was left unwatched in a passage, and passing through an unlocked door which gave her access to an adjoining court-room, from the window of which she descended. Her Majesty's Inspector remarked, that 'the case seems only to require 'the usual observation, that the keepers of small prisons are seldom alive to the 'extent of their responsibilities until a prisoner has escaped from their custody.'

Suicide.

One act of suicide in a local prison was reported to us this year. It was committed on the 1st of September, by a convicted female prisoner in the prison of Kilmarnock, 43 years of age, hanging herself from a bar of her cell window by her handkerchief. She was said to be addicted to many troublesome devices, and to have been previously found pretending to commit suicide; and the officers of the prison have the impression that she was only repeating the same trick when the fatal result occurred. The case was fully investigated, and no blame appeared to attach to any officer of the prison.

Escape from Glasgow Prison in 1859.

In our last Report, we stated that an escape from the Prison of Glasgow, in November 1859, was still under investigation, but nothing of importance, in addition to what we then stated, was discovered in relation to it.

We shall now, as well for the purpose of fully reporting on our own proceedings, as of supplying you with information which may be useful to you in carrying out the new Act, state the few instances in which our communications with County Boards, regarding the extent and efficiency of the accommodation in Local Prisons, have not been brought to a satisfactory practical conclusion.

Extent and efficiency of Local Prisons.

Prison of Kirkcudbright.

The County Prison of Kirkcudbright has been frequently stated in the Annual Reports of Her Majesty's Inspector to be insufficient for the purposes of a County Prison, and he has repeatedly brought under our notice infringements of proper discipline caused by the insufficiency of the structure. In our Twentieth Report we stated that plans for an enlarged Prison were in preparation, but had not yet been laid before us in a complete shape. In our last Report we had to inform you, that although plans were submitted to us during the year 1859, they were not such as to meet the views of Her Majesty's Inspector, on the extent and character of the prison accommodation required by the district, but that we had reason to believe that the County Board were earnestly directing their attention to the reconstruction of the Prison. We believe this to be still the case, although no plans have been submitted to us; and the only communications we have had with the County Board on the subject, have ended in the approval of a proposal to purchase ground for the enlargement of the Prison. The site of this Prison, which is in the centre of the town of Kirkcudbright, renders its enlargement a matter

of difficulty, and in comparison with its removal to another site, of doubtful policy.

In the Prison of Greenock, in the county of Renfrew, we reported to you last year as follows:— Prison of Greenock.

'We have long considered the Prison of Greenock to be unsatisfactory and 'unsuited to the wants of the district. In 1857 we found it necessary to re- 'duce the period for which convicted prisoners could be confined in it from '40 days to 20 days; but we have no power to restrict the period during 'which prisoners may be detained before trial. The result of the profes- 'sional survey, referred to in our last Report as about to be made, confirmed 'us in the conclusion that it will be necessary to renew this Prison,—an 'alternative which had been urged on the County Board by the Town-Council 'of Greenock more than ten years ago. A resolution was communicated to 'us by the County Board, to the effect that certain improvements specified 'by them would suffice; but considering the extreme smallness of the cells and 'other fundamental defects, we adhered to the view that a renewal is necessary.'

Besides the usual building assessment, amounting annually to £562, 17s. 1d., the local authorities consented, under the powers in the Statutes, to raise an additional sum, amounting in all to £8385, 18s., to be raised by equal portions in the year 1849 and the eleven succeeding years. The annual instalment on this sum amounts to £698, 16s. 6d.; and, in terms of the original arrangement, this amount would have to be raised for the year 1860 and in the year 1861. It lay with us to consider whether we should include the usual building assessment for this county in our estimate for the year 1860, transmitted to you in our last Report. The County Board requested us to exclude the amount from our estimate, and they at the same time requested us to take steps for dispensing with the collection of the additional assessment for the previous year 1859. In the course of our correspondence, we reminded the County Board, 1st, that the Town-Council of Greenock had memorialized them on the necessity of renewing the Prison of Greenock; 2d, that the County Board had represented as an inducement for that corporation withdrawing their opposition to the collection of the additional assessment, that a portion of the ordinary building fund would be reserved to form a fund to be expended on that prison; and 3d, that no such fund had been reserved.

We consequently declined to take any steps for dispensing with the collection of the additional assessment, and we felt it to be our duty to estimate for the ordinary assessment in our last Report. You were pleased to intimate to us your approval of that estimate. The County Board have remitted to us a portion of the usual building assessment for 1860; but a minute of certain proceedings, which they transmitted to us, renders it unlikely that they have proceeded to raise the additional assessment. We now leave this matter in your hands, with the statement that we still consider the Prison of Greenock unsatisfactory, unsuited to the wants of the district, and so fundamentally defective that it ought to be rebuilt.

The Prison of Falkirk, in the county of Stirling, having long been pronounced insufficient, we stated in our last Report that working plans had been prepared for the erection of a new Prison there. It was to consist of eight cells, and be adapted for the custody of Prisoners sentenced to periods short of a month. On the 18th February we intimated to the County Board our approval of the plans conditional on their giving effect to certain minor alterations. On their remonstrating against these conditional alterations, we intimated to them, on the 25th of April last, that we saw no reason to deviate from the resolution previously adopted by us. We have had no farther correspondence with the County Board on this matter, and can only infer, that they have made no progress in building the new Prison of Falkirk, since they have not applied to us for any portion of the County Building Fund standing at our order. Prison of Falkirk.

The County Prison of Stirling has been represented in our Reports as, down to the year 1854, insufficient for the proper separate accommodation of the number of Prisoners usually detained in it. Since that period, the average number of Prisoners has so considerably and progressively decreased, that unless there be a reaction, it will probably be unnecessary to resume proceedings for obtaining additional accommodation. This Prison has, in the Criminal Department, 53 separate cells or rooms, and in these, for the year ending in June 1853, the average daily number of Prisoners was 116. In the ensuing year it was 105; in our last Report it was stated for the year 1859 as Prison of Stirling.

73; for the year ended in June last it was 56. The number has lately varied, being for the June quarter 38; and for the September quarter 43. The building of a new Prison at Falkirk, if completed, will have some effect in further relieving this Prison.

County Prison of Perth.

The County Prison of Perth is in nearly the same position. It contains separate accommodation for 47 prisoners; and when the daily average number amounted to 100, as it did in 1853, we considered it necessary to press on the County Board the necessity of providing increased accommodation. The numbers afterwards showing a decrease, we concurred with the County Board in postponing the question of enlargement. The average daily number for the year ending in June 1859 was 60. For the corresponding year 1860 it was 46; and for the September quarter 58. This county possesses a building fund amounting to £4550, with interest since 1st January.

Prison of Kilmarnock.

The Prison of Kilmarnock, in the county of Ayr, is in a defective condition. An escape accomplished from it in 1858, showed it to be insecure, and we called upon the County Board to take the necessary steps for remedying its defects. No such steps have as yet been taken, nor have our remonstrances on the subject, in the year 1859, to which the County Board have subsequently been referred, received any attention. They represented that a building assessment for the year 1860 would be unnecessary; but in the circumstances we thought it proper to include the assessment in our estimate.

Prison of Elgin.

In relation to the County Prison of Elgin, we stated, in our last Report, that we were in communication with the County Board on the question whether it is sufficiently large for the wants of the district. It has accommodation for the separate confinement of 10 inmates, and the average daily number for the September quarter of 1859, was 16, while the Prison, on more than one occasion, contained as many as 22. In the first half of the present year the average had fallen to 9, and in the September quarter it was 7. We have had no recent communication with the County Board on the subject, but we thought it proper, considering the state of matters last year, to include the building assessment for the county in our estimate.

Prison of Bute.

The County Prison of Rothesay, in Buteshire, was, in our last Report, charged with structural defects, which were found materially to interfere with discipline. The County Board had expressed their willingness to consider any available suggestions for a remedy, but no detailed arrangements for the improvement of that Prison have yet been proposed, although Her Majesty's Inspector has suggested that some additional cells may be necessary. We thought it proper, in these circumstances, to include the building assessment of the county in our estimate for 1860.

Prison of Kirkwall.

In relation to the County Prison of Kirkwall, in Orkney, we stated in our Twentieth Report for the year 1858, that 'the county are taking steps for 'procuring a new Prison, the present edifice being in several respects defec-'tive.' No plans for a new Prison have been yet laid before us; and in November last, we recalled the attention of the County Board to the subject. On the 3d curt. they informed us that 'as it is now proposed by the Commis-'sioners of Supply to furnish additional Court-house accommodation under 'the provisions of the recent Sheriff Court-house Act, it is anticipated that 'arrangements will soon be made for proceeding simultaneously with both 'sets of buildings.' There is a building fund for the county, which ought to amount to £1548, 18s. 8d.

Prison of Lerwick.

The County Prison of Lerwick, or Fort-Charlotte, in Zetland, has been pronounced by Her Majesty's Inspector 'a very unsafe one,' in reference to a recent escape, referred to above, on which he favoured us with a report. The County Board have been collecting a fund for building a new Prison, which should at present amount to £1426, 2s. 8d.

Proposed Prison at Oban.

The Prison Board of Argyle being desirous to erect a small Prison at Oban, we, as stated in our last Report, approved of the proposal, and of the plans for carrying it into effect, which they laid before us. They subsequently discovered some objection to the plans, and these have not again been laid before us for our approval, nor have any steps concerning them come lately under our cognizance.

Matters left uncompleted.

We have left upon the record of our minutes, and in the documents transferred by us to the Managers under the new Act, such information as will enable them to bring to a completion any uncompleted matters relating to Local Prisons, whether by communicating with you, or in such other way as they may find proper.

II.—OUTLINE OF THE BOARD'S PROCEEDINGS FROM THE COMMENCEMENT IN AUGUST 1839.

Former Management of Prisons.

Before the institution of the Board, the management and discipline of the several Prisons were, in terms of a Statute passed by the Parliament of Scotland in 1597, the function of the Burghs or Municipal Corporations, which were burdened with the expense of building and supporting the fabrics of the Prisons, with the remuneration of the staff, the maintenance of the prisoners, and, in general, the whole cost of the department. There came to be some local exceptions to the pressure of this burden entirely on the burghs. At the end of last century, and the beginning of the present, some counties volunteered pecuniary assistance to the burghs; and, in a few instances, separate local Prisons or Bridewells were built and maintained under the provisions of local Statutes. An Act was passed in 1819 (59 Geo. III. cap. 61), for enabling counties to raise money by assessment for the purpose of contributing to the building or improving of Prisons. The adoption of the provision was optional to the Commissioners of Supply, and when a Prison was completed out of the funds thus advanced, the burgh became responsible not only for the salaries of the officers and the maintenance of the prisoners, but also for keeping the building in repair. This Act was intended to give effect to a recommendation by a Committee of the House of Commons, who stated, as the result of inquiries made by them in 49 burghs, 'that it appeared that with the exception of 8 or '10, none of the gaols in these burghs are in a good state, and many of them 'are both insecure and incommodious.'

Parliamentary and Official Testimony to the former Condition of Prisons.

In 1826, a Select Committee of the House of Commons was appointed to inquire into the state of the Prisons in Scotland, who reported, 'That the re-'sult of this inquiry has, in the opinion of your Committee, been to show that, 'with a few exceptions, the state of those Prisons is very defective in point 'of security, accommodation, and management; while the funds from which 'such Prisons ought to be improved are, in most instances, inadequate to that 'purpose.' And they came to the conclusion that 'it is no longer a matter 'of choice, but of necessity, that a speedy and effectual remedy should be ap-'plied to an evil of such magnitude.'

10 Geo. IV. cap. 54.

In 1829, an Act was passed for obtaining reports on the structure, management, and fitness for their purpose of the Prisons in Scotland, on the preamble, that 'the gaols in Scotland are generally insecure and incommodious, 'and it is necessary that sufficient gaols should be there erected and maintained.'

The Commissioners appointed in 1833 to inquire into the condition of the Municipal Corporations in Scotland, after referring to these repeated admonitions from Parliament itself, say, 'But still no steps have been taken for 'improving the condition of Prisons and of Prison discipline in Scotland; 'and we feel it our duty to report to your Majesty that the gaols in many of 'the burghs are still in a state utterly unfit for the reception and detention 'of prisoners.'

These Commissioners further reported as follows:—

Report, pp. 62, 63.

'In many burghs the common good has been so wasted that their funds 'have, in later times, been insufficient to maintain gaols in a proper condition, 'and in some burghs their state is highly discreditable. They are neither 'secure nor healthful places of confinement, nor placed under charge of 'proper gaolers. Some of the burghs have let their gaols go entirely to 'decay, and this throws an additional burden on the neighbouring burghs. 'The number of Prisons has tended to increase the evil, as every royal 'burgh and burgh of regality had a gaol. In the smaller burghs the magis-'trates were not qualified to frame proper regulations as to Prison discipline 'and accommodation, nor had they funds to enforce that system which more 'enlightened views and the more extensive resources of larger communities 'have ultimately secured; on the contrary, they often had an interest to 'maintain the establishment in the meanest and most unsuitable manner in 'order to save extraordinary expense to the community.'

In 1835, by an Act otherwise referring solely to England, Her Majesty was

empowered to appoint inspectors to inspect and report on the prisons throughout Great Britain; and since that time it has been the duty of the inspector for Scotland to report annually to the Secretary of State on all the prisons within his district. The following is an extract from the Inspector's first report, dated 3d February 1836:—

"The following appear to me to be the principal evils at present existing in the Prisons of Scotland:

"1. Want of the means of separation of prisoner from prisoner, and of the means of preventing intercourse from without.

"2. Want of employment, and a provision for instructing the prisoner in a trade, or other means of earning an honest livelihood on leaving prison.

"3. Want of mental, moral, and religious instruction.

"4. Insecurity of the prisons.

"5. Want of arrangements for securing that the condition of prisoners shall in no respect be better than that of honest labourers.

"6. Great expense of many of the prisons, especially the smaller ones.

"7. Frequent incompetency of the keepers of the Prisons, and want of female officers.

"8. Want of the means of inspection.

"9. Want of cleanliness and ventilation.

"10. The excessive quantity of time which the prisoners pass in bed.

"11. Want of an adequate motive in the separate burghs and counties for taking effectual measures for preventing the recurrence of crime, and for promoting the reform of the offender.

"12. Paralyzing effect on the administration of criminal justice arising from the bad state of the Prisons.

"13. Injustice of the present system which often entails considerable expenses on a small burgh or county in the punishment of offenders not residing within it, and for whose crimes it is not justly accountable."

We conclude these Parliamentary and official testimonies to the condition of the Prisons with a passage from the preamble of the Act under which we were appointed, which states that 'the Prisons in Scotland are in general 'insecure and incommodious, and incapable of admitting of the adoption of a 'good system of Prison discipline therein.'

Objects of the Act of 1839.

2 & 3 Vict. c. 42.

The object of the Act of 1839, by which this Board was constituted, was not only to reorganize the existing administration of Prisons in Scotland, but to give ample powers for dealing with the existing edifices, and supplying the country with a sufficient number of buildings suitable for prison purposes.

Functions of General and County Boards.

By this Act all the existing bodies having the charge of Prisons were relieved of their responsibilities and dispossessed of the Prisons. The Local Prisons and their management were vested, subject to the control of the General Board, in a Board elected for each county. In the County Board, the old corporations were represented by certain members selected by the Town-Councils of Royal Burghs, and the landowners were represented by certain members selected by the Commissioners of Supply. The number to be chosen by each was adjusted to the amount of prison-tax payable by the burghal and the landward part of the county respectively.

At the same time there was provision for the erection of a General Prison at Perth. It was to be a model prison for the reception of prisoners under long sentences; and while the General Board were authorized, from time to time, to define the classes of prisoners who might be received in it, all prisoners who had not six months of their sentence to run were excluded from it by the Act.

There were four separate assessments authorized by the Act.

The Assessments.

1. The assessment for the current expenses of Local Prisons. The amount was to be voted annually by the County Boards and administered by themselves. The General Board had no function in relation to this assessment, except to divide the amount between the landward part of each County and the several burghs within it according to their respective liabilities.

2. The expense of building and repairing Local Prisons. The General Board were authorized to estimate annually the amount required under this head from each county. Their estimate was limited to the amount which the county would have to pay according to a mixed calculation of its relative population and crime to those of the rest of Scotland, on the supposition of the sum of £10,000 being so assessed over the whole country. This assess-

ment could only be levied if the Board's estimate were approved of by the Secretary of State. Additions might be made to its maximum amount by the consent of the local authorities.

3. The expense of building the General Prison. For this service the Act provided £10,000 out of the Consolidated Fund. An assessment for supplying a further sum of £26,500 by instalments, at first limited to £2000 a year, and after 1844 limited to £1200 a year—was divided in the same manner as the assessment for building Local Prisons. It came to an end in 1858, when it ceased to be necessary for paying up loans to the Exchequer Bills Loan Commissioners, for which it was mortgaged. These loans amounted in all to £19,950, and the interest on them to £6478. All additions and other structural works at the General Prison have been paid for by the Treasury out of the votes for that service by Parliament. The sums so voted have in all amounted to £67,750. The total cost has thus been £104,178.

4. An assessment for the current expenses of the General Board and the General Prison. This was discontinued—the former service having since 1844, and the latter since 1846, been paid for out of the sums voted for them respectively by Parliament.

Rules for Prisons.

The Act authorized the Board to frame Rules for the government of the Prisons in Scotland, to be submitted to the Secretary of State for his approval. Various Rules were from time to time framed under this provision, and they were all in the year 1855 condensed, under the direction of the Board, into one code, which has been incorporated with the new Act for the administration of Prisons.

Declarations certifying Prisons.

That provision of the original Act, however, which was found the most efficient for insuring suitable Prison accommodation throughout Scotland, was the clause vesting in the General Board powers to adjust the classes of prisoners for whom any Prison might be legally used, to discontinue the use of any existing Prison, and to certify any new building as a legal Prison. It will afford, perhaps, the most distinct evidence of the useful ends to which these powers have been employed to state that, when the Board came into existence, they reported that, 'Counting Prisons of every kind, there are at 'present about 170 in Scotland;' and when the Board comes to an end it will leave in existence 72.

Old Constitution of Prisons.

We are able to state the precise number of Prisons now existing; while, it will be observed that, at the commencement, only a general estimate of the number could be given, owing to the doubtful character of some of the buildings represented to the Board as Jails or Prisons. The larger edifices, generally, had a distinctive character legally communicated to them. Some of them were constituted by local Acts, and others were rendered legal Prisons by Acts of Adjournal passed by the High Court of Justiciary, and Acts of Sederunt passed by the Court of Session. It had become the practice, when there was any new Prison built, or any considerable addition made to an old Prison, and, in some instances, when it was desirable to remove doubts as to the character of an edifice as a lawful place of detention, to apply to the Court of Justiciary to take order as to the criminal department, and to the Court of Session as to the civil department, if there was one; and thus the character of certain edifices as Prisons became established by Acts of Adjournal and Acts of Sederunt.

There were, however, many edifices deemed Prisons, possessed of a mere traditionary character, which, in some instances, hardly went the length of ancient fixed usage. For instance, there might be a strong-room in what had been the Lord of Regality's castle, or in the town-house, of which it might be doubtful whether it was a Prison to which a criminal could be committed for permanent custody, or merely a lock-up to enable an officer to keep the person he had apprehended in safe custody.

Prisons defined.

The Board took steps to obviate in future any such doubts about the character and purposes of the edifices committed to their administration. They drew a line between legal Prisons in which alone prisoners could be received under the warrants of magistrates, and lock-ups or strong-rooms for the custody of parties accused on the responsibility of the officers apprehending them until they could be brought before a magistrate for examination. On this principle it was determined that no edifices should remain under the administration of County Prison Boards, but those to which prisoners could be committed under magistrates' warrants; and on the other hand, that the

Governors of the several Prisons under the administration of the Board 'shall
Rule 19. ' receive no party into the Prison as a prisoner without a written warrant
' from a magistrate for such party's commitment.'

System of Discipline —the Separate System.

The predominating character of the system of discipline which has been promulgated, and, as far as practicable, carried out by this Board, has been *separation* without *solitude*. By Statute we were directed to keep particularly in view the 'training the prisoners in good and industrious habits, by effecting ' their complete separation from vicious society, and by affording them religi- ' ous and moral instruction, and employing them in useful labour.' In carrying out the spirit of this instruction, the Board believed that, by suitably built prisons and a properly regulated staff, they could exempt prisoners from the contaminating influence of the old promiscuous association, without incurring the risks which experience had shown as attending both the absolutely solitary and the absolutely silent system. To this end, it was their endeavour that every prison in the county should have a separate cell or apartment for each prisoner, and should be constructed on a sufficient scale so to accommodate any number of prisoners likely to be committed to it. It is provided in the Rules that the prisoners thus kept from contaminating communication with each other, shall receive at least ten visits daily from chaplains, teachers, and others, whose communications may be expected rather to improve than to deteriorate them.

Twenty years' experience of the working of the separate system has not shaken our confidence in its value as a feature in pure prison discipline, that is to say, in the discipline administered to criminals sentenced to periods of imprisonment. The almost total abolition of transportation to Australia rendered it necessary to devise a system of detention in establishments at home for convicts who, under the old arrangements, would have been transported; and it was found that detention in separate confinement, through the full period of a sentence of transportation, would not be suitable for such convicts. It was stated, indeed, as the result of experience and observation in England, that convicts entering prisons under the depressing influence of their long sentences, could not endure, without physical and mental deterioration, the periods of separation to which criminals sentenced to imprisonment could be safely and beneficially subjected. It did not so much lie with this Board to develop a system of discipline for convicts, as to carry out the principles which had been adjusted in England, and communicated to the Board by your predecessors; since, as we shall have afterwards to state, convicts sentenced to transportation and penal servitude were not placed under our management until after considerable progress had been made in settling the leading outlines of the discipline to which they should be subjected. We mention the matter here for the purpose of explaining that, in admitting the necessity of associating such convicts after a period of their sentences has elapsed, our confidence in separation as a principle of prison discipline has not been shaken.

In this view, the General Board pressed upon the consideration of the County Boards the policy of providing separate accommodation for their prisoners, even in those instances where the object could not be accomplished without a considerable outlay for the building of new prisons. The Statute requires that there should be 'a prison in every town in which Circuit-courts
2 & 3 Vict. c. 42, § 26. ' are held by the Court of Justiciary, and in every town in which any Sheriff ' is in use to hold courts for the exercise of his ordinary criminal jurisdiction.' In carrying out this provision, care has been taken that in each county there shall be at least one prison rendered legal for all descriptions of civil and criminal prisoners. Besides these county prisons, there have been permitted to remain, or there have been erected, subsidiary prisons, from which, in the general case, civil prisoners are excluded, and which are rendered legal only for carrying out short sentences.

Prisons Built.

In carrying these arrangements into effect, besides the General Prison at Perth the following thirty-eight Prisons have been entirely built under the administration of this Board, viz. :—

Airdrie, Arbroath, Banff, Brechin, Campbeltown, Cullen, Cupar, Dingwall, Dornoch, Dumfries, Dunblane, Dunfermline, Dunse, Elgin, Forres, Fort-William, Fraserburgh, Haddington, Hawick, Helensburgh, Huntly, Inverness, Keith, Kelso, Kilmarnock, Kirkintilloch, Linlithgow, Lochgilp-

head, Lochmaddy, Nairn, Peterhead, Pollockshaws, Portree, Stirling, Stornoway, Stranraer, Tain, Wigtown.

New Edifices added.

In the following eleven instances new edifices have been added to existing Prisons, viz.:—

Alloa, Ayr, Dumbarton, Dundee, Edinburgh, Forfar, Hamilton, Glasgow, Inveraray, Paisley, and Perth.

Prisons enlarged.

In the following fourteen instances Prisons have been enlarged or otherwise improved under the administration of the Board, viz.:—

Cromarty, Greenlaw, Jedburgh, Kinross, Kirkcudbright, Lanark, Lerwick, Montrose, Musselburgh, Peebles, Jedburgh, Selkirk, Stonehaven, Wick.

Prisons remaining as they were.

The only Prisons in Scotland remaining nearly in the condition as to extent and construction in which they were found by the Board are those of Aberdeen, Dunbar, Falkirk, Greenock, Kirkwall, Maxwelltown, Rothesay, and Tobermory.

Prisons abolished.

The Prisons abolished by the Board are named in the annexed Table. In some instances there has been merely a discontinuance for temporary causes; and the absolute number of old prisons in that Table which have been permanently abolished by the General Board is 101.

Such a change was, as might be expected, encountered by many difficulties, of which the chief were the obtaining of the necessary funds for new erections and the getting rid of unsuitable buildings. There was often a natural reluctance in small corporations to part with the prison, which they deemed not only a convenient institution, but a type of their municipal rank; and they were called upon not only to sacrifice their own prison, but to pay for the erection of another in a neighbouring and, perhaps, a rival burgh. Without the cordial co-operation of the County Boards, and of the other local authorities, the General Board could never have overcome such impediments; and it is due to these bodies to say, that, with few exceptions, they always in the end agreed to sacrifice predilections or separate interests when they were convinced that these would stand in the way of the public good.

Sums raised for Building.

The sums which have been raised under the Acts for building, altering, and repairing local Prisons alone, without counting any other items of expenditure, amount, including the present year's assessment, to £253,331, 12s. 6d., being £166,524, 9s. 4d. estimated for by the General Board, and £86,807, 3s. 2d. in the form of additional assessments consented to by the local authorities. If to this be added a sum of £12,516, 18s. 1d., collected as a building assessment under the Act to pay for the cost of a Prison which had just been erected in Dundee, the sum-total will amount to £265,848, 10s. 7d. Of this sum of £253,331, 12s. 6d. there have been expended £223,903, 14s. 2d., leaving, besides a considerable amount of interest on old deposits in bank, a balance still available of £29,427, 18s. 4d.

Apportioning and Accounting.

It was one of our functions to apportion the liability for this fund by first fixing the proportion for which each county was liable, and then in each case subdividing the amount so determined among the several communities within the county separately responsible for its payment. We had in the next place to see to the receiving and proper collection of the fund, and to this end we had to keep with each county a separate account, and had to frame general and special annual accounts, showing the administration of the whole of these funds, as well as of the other monies placed in our hands.

Small Remnant of unsatisfactory Prisons.

We have already brought under your notice, in the early part of this Report, the instances in which we have been unable to bring our communications with local Boards, relating to certain Prisons, to a satisfactory practical conclusion. These few and comparatively unimportant instances of defective Prisons, are the only exceptions to the general fact that each county now possesses sufficient separate and suitable accommodation for all the prisoners likely, in the existing condition of the country, to be committed to custody. We have referred to two instances in each of which a noted decrease in the number of prisoners had induced us to desist from urging the enlargement of a Prison. There is no doubt that the provision of sufficient Prison accommodation throughout Scotland has been greatly facilitated by the progressive decrease of crime, so far as it is represented by the occupancy of Prisons during the past ten years. We shall state the daily average number of prisoners in custody, as this may be considered the simplest test of the extent to which the prisons have been used.

Decrease in Number of Prisoners.

The daily average number for the years ending in June have, since the year 1850, been as follows:—

1850,.....3112.	1856,.....2291.
1851,.....2866.	1857,.....2183.
1852,.....2975.	1858,.....2156.
1853,.....2836.	1859,.....2211.
1854,.....2756.	1860.....2191.
1855,.....2473.	

The average daily number for the quarter ending in September last was 2172.

Employment of Prisoners. Rule 79.

To give effect to the statutory injunction to employ prisoners in useful labour, we adopted a rule requiring that each prisoner sentenced to a period upwards of ten days should be required to do ten hours' work daily, as far as practicable, of a useful kind; and that to civil and untried prisoners, who could not be compelled to work, the opportunity of doing so should be given. In the Quarterly Reports of the Governor, and in various other shapes, specific information has been required from each Prison as to the kinds of work in which prisoners have been employed, the net proceeds, and the average daily earnings of the prisoners collectively and individually. The information so obtained has formed materials for statistical tables appended to our Annual Reports.

Hard Labour.

After these arrangements had been for some time in operation, it was suggested to the Board in communications from eminent practical authorities on Prison discipline, whose views were supported by the Secretary of State, that some more stringent elements might be beneficially introduced into Prison discipline. Among these were the suggestion that it is sometimes more important that labour should be penal and deterring, than that it should be productive. A long and diligent inquiry on the part of the Board justified this view, and consequently in 1851 an Act was passed, rendering it competent for judges to accompany sentences to imprisonment by sentences to hard labour, and authorizing rules to be prepared for carrying such sentences into effect. After a still further inquiry, accompanied by experiments on which experienced Prison officers reported, the Board adopted two methods of hard labour. The one is the crank turned with the hand, which, from the facility with which the amount exacted can be adjusted to the strength of the prisoner, was deemed preferable to any other machine for exacting labour. The other is the picking of dry oakum, which is capable of being enforced where the crank cannot be conveniently and properly used.

Guard-Bed.

At the same time, as a further deterrent influence, a rule was adopted to the effect that prisoners sentenced for no longer than a month, and other prisoners during the first month of their sentence, should not be indulged with a mattress, but should have for their sleeping place a "guard-bed," being a board and a wooden pillow, supplied with a covering sufficient for warmth.

We have stated in the Report of our proceedings during the year, that a modification of the rule as to the guard-bed has been suggested to us, and that we had requested returns from the several Prisons, in reference both to this rule and the rule for hard labour, and that these returns would have to be dealt with by you.

THE GENERAL PRISON.

Opening of the General Prison.

The General Prison at Perth, placed by the Statutes under the immediate management of the Board, was opened on the 30th March 1842, for prisoners having not less than six months of their sentence to run. It then contained 360 cells; 240 in the male, and 120 in the female department.

In the year 1846 a department was added to the Prison for criminal lunatics, viz., insane persons in Prison charged with or convicted of crime; and with a very few exceptions all of these who have been committed to

Prisons in Scotland for considerable periods have been placed in that department. Its inmates may be divided into, 1st, Those found insane in bar of trial; 2d, Those found to have been insane when the act charged against them was committed,—both these classes used to be adjudged to be detained in Prison until further order of Court, but since the passing of the Lunatics Act in 1857, they have been adjudged to be at Her Majesty's disposal; 3d, Those sentenced to punishment, and certified on medical authority to have become insane; 4th, Those committed on a criminal charge, and certified on medical authority to be insane.

Department for Criminal Lunatics.

20 and 21 Vict. c. 71.

In 1848 a separate juvenile department was added to the Prison, and was subsequently rebuilt as already stated. At the same time hospitals for insane and epileptic prisoners were added to the accommodation. A third wing was completed in 1853, when the Prison altogether became capable of containing between 600 and 700 prisoners. A fourth wing was opened in 1859. The four wings of the main Prison now contains 726 cells, with association rooms and hospitals. There are 58 vacant dormitories in the juvenile department, and including the department for criminal lunatics, and making allowance for the average number likely to occupy the hospital accommodation, the Prison is capable of holding from 800 to 900 prisoners.

Additions to the Prison.

Classes of Prisoners admitted.

In 1844, under the Statute which authorized the Board to make regulations fixing from time to time the classes of prisoners sentenced to imprisonment, who might be received into the General Prison, we declared it open for prisoners whose sentence was not less than one year. In 1848, finding that the Prison could not receive all the male prisoners sentenced to imprisonment for a year and upwards, and considering it important that the discipline of the General Prison should be imparted to male rather than to female prisoners, so long as the accommodation was insufficient for both, we discontinued the female department.

In 1849 male prisoners sentenced to transportation were transmitted to the General Prison under orders by the Secretary of State. From that period the Prison became one of the convict establishments. In 1853 the class of prisoners admissible to the Prison was enlarged by a declaration opening it for male prisoners under sentence of nine months and upwards.

Male Convicts.

In consequence of communications between the Secretary of State and this Board, the disposal of the accommodation of the Prison was recast, and new arrangements came into operation in 1855. By these all male convicts were withdrawn, and the Prison was adapted for female convicts—viz., those sentenced in Scotland to transportation or to penal servitude. The Prison was at the same time declared to be open to receive male prisoners sentenced to imprisonment for nine months and upwards, and female prisoners sentenced for twelve months and upwards. During the interval which elapsed between these new arrangements and the enlargement of the General Prison, a portion of the female convicts were detained in the Prison of Ayr, where 82 vacant cells were placed at the disposal of the Secretary of State.

New arrangements—Reception of Female Convicts.

These changes brought under the consideration of the Board a new element in Prison discipline—that of the treatment of convicts through the various stages of their long sentences. They found their way to practical conclusions as the periods of the respective sentences ran on, and rendered changes in the method of discipline necessary, and they received great aid in this department from the zealous labours of one of their number, Mr. Monteith. They established three stages of discipline—the first, a penal stage, lasting for a year, during which the convict is kept in separation and subjected to discipline varying but slightly from that of ordinary prisoners. A second stage in which the discipline is in some measure relaxed also lasts for a year, when the third, characterized by further relaxations, commences. These arrangements are more fully described in our last Annual Report. It will be for our successors in the management to adapt the system of discipline to still more advanced stages in the detention of those convicts whose sentences are of long duration.

Convict Discipline.

Having referred to the statements made in Parliamentary documents, and in the Reports of impartial inquirers acting under official authority and responsibility, describing the condition of the Prisons throughout Scotland when this Board came into existence, and having mentioned the several measures taken for correcting the defects so pointed out, it remains for others to decide whether the condition in which we leave this department of the public service shows that our proceedings have been beneficially effective.

We have the honour to be,

Sir,

Your very obedient Servants,

JOHN CAY.
W. JOHNSTON.
ADAM BLACK.
EDWARD S. GORDON.
THOMAS CLEGHORN.
E. F. MAITLAND.
JOHN T. GORDON.
ALEX. E. MONTEITH.
J. MONCREIFF.
A. MURRAY DUNLOP.
BREADALBANE.
ELCHO.
W. GIBSON CRAIG.
A. C. GIBSON MAITLAND.
JOHN BALFOUR.

REPORT

BY THE

MANAGERS APPOINTED UNDER THE PRISONS (SCOTLAND) ADMINISTRATION ACT,

SUPPLEMENTARY TO

THE CONCLUDING REPORT OF THE GENERAL BOARD OF DIRECTORS OF PRISONS.

Edinburgh, 13*th February* 1861.

In compliance with the provision of the Prisons (Scotland) Administration Act, 1860, which requires us to bring to completion all matters and proceedings left by the General Board of Directors of Prisons uncompleted, we have the honour to report as follows :— 23 and 24 Vict. c. 105, sect. 56.

The Returns of Prison Statistics made under the requisition of the General Board, as set forth under the first head of their Concluding Report, have been digested and arranged, and printed in the Appendix, so as to continue the Tables of Statistics heretofore printed by the General Board, in the order and form adopted by them. Tables of Statistics of Prisons. App. No. V.

Along with these there is a special digest of Returns obtained by Requisition of the General Board, on the operation of the Rules relative to Hard Labour and the Guard-bed. Referring you to the Board's Concluding Report for an explanation of the tenor and object of these Rules, we respectfully solicit your attention to the Table, not only as setting forth the experience of a large number of Prison Officers on the operation of the Rules in question, but as having special reference to a modification on the Rule regarding the Guard-bed, suggested by Her Majesty's Inspector of Prisons, and left by the General Board to be dealt with under the new Act. App. No. VI.

The great bulk of the Statistics appended to this, as well as to the previous Reports, covers the year down to the end of June. The following Table continues the statement usually made by the General Board of the average daily number of Prisoners for each year ending in December, from 1840 downwards :— Average Number of Prisoners.

Period.	Civil.			Criminal.		
	Males.	Females.	Total.	Males.	Females.	Total.
In 1840	98	10	108	1,264	676	1,940
1841	90	7	97	1,222	742	1,964
1842	88	6	94	1,557	865	2,422
1843	84	6	90	1,499	789	2,288
1844	83	5	88	1,492	766	2,258
1845	69	5	74	1,323	769	2,092
1846	54	6	60	1,359	848	2,207
1847	44	2	46	1,596	932	2,528
1848	51	2	53	1,928	1,041	2,969
1849	58	4	62	2,035	1,108	3,143
1850	68	1	69	1,974	1,016	2,990
1851	75	1	76	1,885	1,015	2,900
1852	78	4	82	1,915	1,004	2,919
1853	66	2	68	1,771	953	2,724
1854	55	4	59	1,742	924	2,666
1855	57	5	62	1,452	864	2,316
1856	69	3	72	1,239	971	2,210
1857	56	2	58	1,196	1,005	2,201
1858	70	2	72	1,119	995	2,114
1859	69	1	70	1,098	1,093	2,191
1860	62	2	64	1,044	1,057	2,101

Progressive decrease of numbers of Prisoners.

The General Board, in their recent Reports, drew your attention to the progressive and steady decrease in the number of Prisoners in Scotland, down to the year 1859, when the decreasing process seemed to be checked. It appears now, however, to have resumed, since in the year ending in December 1859, the number was 2191, in the year ending in June last, it was exactly the same, and in the year ending in December, it was 2101. The Returns for the December Quarter, indeed, bring the average as low as 2014. It will be observed from the Table given above, that the decrease of female Prisoners is so far from being in the same ratio as that of the male, that for the first time the daily average number of female Prisoners over all Scotland exceeds the average of the male. The detention of female Convicts in Scotland, while male Convicts are sent to England, of course enhances the proportion which the female side bears to the male as a test of criminality. The statistics of the Prison of Edinburgh, at the same time, continue to contribute a large element to the preponderance on the female side. Dundee is the only other Prison where there has usually been an excess on the female side, but it is of small amount. Last year, for instance, the numbers were—male, 36; female, 38. The corresponding numbers for Edinburgh were—male, 148; female, 193. For the Quarter ending in December, the numbers were male 140, female 194. On grouping the averages for the year in all the Local Prisons, with the exception of Edinburgh, it will be found that the numbers stand 673 on the male, and 480 on the female side.

THE GENERAL PRISON.

The distribution of the accommodation in the Prison was, at the close of the year, as follows :—

	For Prisoners Sentenced				TOTAL
	To Imprisonment.		To Transportation or Penal Servitude.		
I. The Prison Proper, exclusive of the Department for Lunatics—	M.	F.	M.	F.	
Accommodation. Separate Cells,	246	123	...	352	721
Dormitories in Juvenile Department (discontinued),	58	...	...	...	58
Hospital and Associate Accommodation in use,	9	4	...	28	41
Total,	313	127	...	380	820

II. The Department for Criminal Lunatics—	Males.	Females.	Total.
Accommodation in 31 apartments for	32	12	44

Besides the whole Juvenile Department, with its Association and Work rooms and its 58 dormitories, there were vacant at the end of the year 178 cells. Counting other apartments that might be rendered available, it would be easy to accommodate, in the establishment, 250 prisoners beyond the number shown by the following analysis to have been in custody at the end of the year.

Vacant Accommodation.

Mode in which Prison was filled.

At the close of the year 1859, the number of prisoners in the Prison was 736—viz., 274 males and 462 females.

There were admitted during the year—

Prisoners sentenced to periods of imprisonment, 268—viz., 187 males and 81 females.

Female convicts sentenced to transportation or penal servitude, 68.

Criminal lunatics, 2—viz., 1 male and 1 female.

These numbers, added to the number in custody at the close of the preceding year, make the total number who have been confined in the Prison, during the year 1860, amount to 1074—viz., 462 males and 612 females.

There were liberated during the year, 246 males and 108 females, on expiry of sentences to imprisonment, and 85 females under sentence to transportation or penal servitude, 25 of whom were liberated by release on license—2 female convicts were liberated on warrant of the Court of Justiciary, and 2 male and 2 female imprisonment prisoners, and 1 female convict received free or conditional pardons. Liberations and other Removals.

There were 16 deaths. For the particulars of each, we refer to the Report by the Medical Officer, and the relative Tables, both in the Appendix. Deaths. App. No. XI.

At the close of the year, viz., on 31st December 1860, the number in custody was 611—viz., 208 males and 403 females. Number at the close of the Year.

Four males and 1 female from the ordinary imprisonment department, and 1 female from the convict department, were removed to the lunatic department, on certificates of insanity by the Medical Officers. Transferences from Ordinary to Lunatic Department.

The following Table contains an analysis of the ages and corresponding sentences of all the prisoners—viz., 1039, who were during the year in the Prison proper, *i.e.*, exclusive of the lunatic department.

SENTENCES.		AGES.																	
		12 years and under.		16 years and above 12.		21 years and above 16.		30 years and above 21.		40 years and above 30.		50 years and above 40.		60 years and above 50.		Above 60 years.		Total.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
9 months and under 12,	Imprisonment.	1	...	12	...	28	...	27	...	12	...	9	...	7	...	4	...	100	...
12 months and under 18,		6	...	28	8	40	23	60	57	41	33	22	9	3	5	5	2	205	137
18 months and under 2 years,		2	1	5	...	25	16	47	17	24	12	13	7	8	1	2	1	126	55
2 years and upwards,		...	...	2	1	2	2	3	...	1	3	...	...	1	...	...	...	9	6
14 years,	Transportation.	...	...	...	...	...	5	...	...	...	1	...	...	...	...	...	...	...	6
15 years,		...	...	...	...	...	1	...	10	...	4	...	...	...	1	...	1	...	17
21 years,		...	...	...	...	...	...	...	3	...	1	...	...	...	...	...	...	...	4
Life,		...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...	4
3 years,	Penal Servitude.	...	...	...	2	...	14	...	11	...	9	...	5	...	1	...	2	...	44
4 years,		...	...	...	6	...	45	...	66	...	51	...	21	...	8	...	4	...	201
5 years,		...	...	...	...	...	6	...	19	...	6	...	2	...	1	...	...	...	34
6 years,		...	...	...	...	...	9	...	16	...	4	...	5	...	1	...	2	...	37
7 years,		...	...	...	...	...	2	...	6	...	3	...	2	...	...	...	...	...	13
8 years,		...	...	...	...	...	4	...	9	...	5	...	2	...	3	...	1	...	24
10 years,		...	...	...	...	...	1	...	7	...	2	...	...	...	...	...	...	...	10
12 years,		...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
15 years,		...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
21 years,		...	...	...	...	...	1	...	3	...	...	...	1	..	...	...	...	...	5
Total,		9	1	47	17	95	131	137	225	78	137	44	54	19	21	11	13	440	599

We append the usual Reports by the chief Officers of the Prison down to the close of the year, referring to them for information on the following particulars, viz. :— Reports by Chief Officers.

To the Governor's Report for information on—

- The adjustment of the Staff, and the conduct of the Officers.
- The general Statistics of the establishment.
- The Discipline of Prisoners.
- The Labour of Prisoners.
- The Industrial Training of Prisoners.
- The Exercise of Prisoners.
- The Conduct of Prisoners.
- The Receipts and Expenditure, and the relative Cost of the Establishment.

To the Chaplain's Report for—

- The Religious and Secular Instruction of the Prisoners.
- The Educational Statistics.
- The Prospects and Condition of Liberated Prisoners.
- Reimprisonments and other matters bearing generally on the Moral influence of the Discipline.

To the Resident Surgeon's Report for—
The Health, mental and bodily, of the Prisoners.
The Illnesses, and their Causes and Treatment.
The Deaths.
The Management of the Lunatic Department.
The Management of the Hospital Department.
The general Sanitary condition of the Establishment.

RECEIPTS AND EXPENDITURE OF THE GENERAL BOARD.

2 & 3 Vict. c. 42, sect. 8.

It was provided by the Statute which constituted the General Board, that their Annual Report should contain "an Abstract of the whole Receipts and Expenditure, classifying the separate articles thereof, and showing whence the Receipts have been derived, and to what purposes the Expenditure has been applied." For the purpose of carrying into effect the intentions of the Legislature, we now set forth such an Abstract, referring for the particular items of each branch of Receipt and Expenditure to the State of Accounts as printed in the Appendix.

Assessments and Treasury Issues.

The monies to be accounted for have been drawn from two separate sources—the one Assessments on Counties, in terms of the assessing clauses in the original Prisons Act; the other, advances by the Treasury from the grants of Parliament for Prison purposes. An Account of the several Assessments in counties is already given in the Concluding Report, from which it will be seen that there were originally four assessments, one of which, for the current expenses of Local Prisons, never passed through the hands of the General Board, while of the remaining three only one was in operation for the year 1860, viz.—the Building Assessment for Local Prisons, which stands No. 4 in the following Abstract. On the Assessment for erecting the buildings at Perth into a General Prison, a small balance remaining in hand after it ceased to be levied was to be accounted for; while the remaining assessment for the current expenses of the General Board and of the General Prison had ceased for some years to be a department in the General Board's accounts.

Following the arrangement usually adopted by the General Board, we divide this department into four heads:—

1. Assessment for the Expense of converting the Buildings at Perth into a General Prison.
2. Expenses of the General Prison.
3. Current Expenses of the General Board.
4. Assessment for Building, Altering, and Repairing Local Prisons.

1. *Fund raised by Assessment for the Expense of converting the Buildings at Perth into a General Prison.*

Converting the Buildings at Perth into a General Prison.

This assessment, restricted to £1200, was mortgaged to the Exchequer Bills Loan Commissioners for the repayment of a loan of £15,950, obtained in February 1841, and applied to the purpose of converting the Buildings at Perth into a General Prison. The final balance of this loan being paid, the loan was extinguished at the end of the year 1858. The Abstract of Charge and Discharge applicable to the small surplus is as follows:—

CHARGE.

Balance from last Account,	£72	17	6
Interest,	1	6	0
Amount of Charge,	£73	13	6

DISCHARGE.

Balance carried forward,	£73	13	6

Section 56.

The new Act provides that we shall "receive from the said General Board, and remit to the several County Boards any balances of monies raised

within such counties by assessment, in the possession of, or at the order, or under the control of, the said General Board, at the commencement of this Act." The manner in which, under this clause, we have dealt with the above balance will fall to be stated in our First Annual Report.

2. *Funds received for the Expenses of the General Prison.*

(1.) *Current Expenses.*—In the course of the Session of Parliament of 1859, there was voted the sum of £15,692 for defraying the current expenses of the General Prison Establishment. The Lords Commissioners of the Treasury authorized the payment to the Board of various Issues from this grant, and the grant of the previous year, as included in the following abstract:— Current Expenses of General Prison.

RECEIPTS—BEING CHARGE.

Balance at credit brought from last year's account,	£4,348	13	3
Receipts on outstanding accounts for sales and work,	477	2	10
Cash, in full of Issues, from the Grants by Parliament,	14,961	0	0
Incidental Receipts,	85	3	8
Proceeds of Labour of Prisoners in the year 1860, including outstanding Accounts due to the Prison,	5,068	12	5
Repayment of Income-tax by Officers,	71	1	3
Interest on Funds for current expenses,	61	7	2
Liabilities included in the Discharge,	3,643	0	10
Amount of Charge,	£28,716	1	5

EXPENDITURE—BEING DISCHARGE.

Payments in 1860 on account of liabilities incurred during the year 1859,	£3,326	13	8
Current Expenses of the Establishment, including salaries, diet, and clothing of Prisoners, materials for work, &c., paid during the year,	18,961	16	6
Payment to Exchequer, as profit arising on the Labour of Convicts during the year ended 31st December 1859,	709	11	2
Payments for Feu-duty of ground adjacent to the Prison, and for House Rents for Chaplain and other Officers,	188	0	0
Payments for Income-tax on Salaries of Officers,	71	1	3
Loss on outstanding accounts, &c.,	4	2	0
Outstanding accounts for sales and deliveries carried to next account,	680	11	5
Balance to be carried to Charge of next Account,	4,774	5	5
Amount of Discharge,	£28,716	1	5

See App. No. XXIII.

(2.) *Works and Repairs.*—The sum of £3850 was in like manner voted in the year 1860 for these services, viz., £1700 for the expenses of ordinary works and repairs, and £2150 for the expense of special works. The Issues for these services are included in the following abstract:— Works and Repairs.

RECEIPTS—BEING CHARGE.

Balance due to Treasury at 31st December 1859,	£1,402	10	2
Cash in full of Issues,	4,286	10	3
Interest allowed by Bank on Deposits,	7	9	5
	£5,696	9	10

EXPENDITURE—BEING DISCHARGE

Payments for ordinary and special works,	£5,344	7	1
Balance,	352	2	9
	£5,696	9	10

See App. No. XXIII.

3. *Funds received for Current Expenses of the General Board, and Miscellaneous Purposes.*

Current Expenses of Board and Removals.

It was the practice of the Board to include the salaries of their officers under this branch of their estimates, but as these salaries are paid by the Remembrancer in Exchequer they do not enter the Board's accounts. They amounted during the past year to £1212. The total amount estimated for the Board's expenses was £1465. In their estimates for the financial year beginning in 1860, the Board separated the amount for the removal of prisoners sentenced to imprisonment from the estimates of the current expenses of the General Prison, and also separated the amount for the removal of convicts from the estimate for the miscellaneous expenses of the Board, and made an estimate for both classes of removals, amounting to £1180. You, however, having directed that the accounts should be kept as formerly, the monies advanced for the removal of convicts are stated in the following abstract. It was unnecessary to draw upon the fund voted for the removal of other prisoners, there being sufficient funds in the monies estimated for the current expenses of the General Prison to meet that service:—

RECEIPTS—BEING CHARGE.

Balance at credit from last year's account,	£504	14	6
Issues to defray the expenses of the General Board,	210	0	0
Imprests for the expense of removal of Convicts,	300	0	0
Rent of dwelling-house above the Board's Chambers sublet,	15	0	0
Interest,	10	5	4
Balance on Board's Expenses Account,	29	7	8
Amount of Charge,	£1069	7	6

EXPENDITURE—BEING DISCHARGE.

Rent of Chambers,	£75	0	0			
Public and Municipal Burdens,	6	5	9			
Petty Disbursements,	73	2	10			
Travelling Expenses of Directors and Officials,	46	4	8			
Law Agent,	71	6	4			
Architect,	21	2	0			
Temporary Clerk,	10	16	0			
Sum,				303	17	7
Expenses incurred in removal of Convicts,				641	6	2
Balance at credit of Account for removal of Convicts,				124	3	9
Amount of Discharge,				£1069	7	6

See App. No. XXIII.

4. *Funds raised by Assessment for the Expense of Building, Altering, and Repairing Local Prisons.*

Expense of Building, Altering, and Repairing Local Prisons.

This is the only assessment for which, in its later years, the General Board had to prepare an estimate for the approval of the Secretary of State. It was usual to apply it only to those Counties where a building fund was deemed necessary. The sum total, supposing it laid on every County in Scotland, was fixed by the Statute at £10,000. But when only laid on a portion of the Counties, as it came of late to be, the proportion that could be laid on each County continued the same; that is, the proportion which might be assessed on the County, supposing the full sum of £10,000 to be assessed over all Scotland. The General Board included 11 Counties in their estimate as approved of by you for the year 1860.

An explanation of the special reasons rendering the assessment expedient

in each of these Counties is given in the Board's Twenty-first Report. The Counties so included, with the sum estimated for each, are as follows:—

Ayr,	£434	5	10	Brought forward,	£3628	10	11
Bute,	47	18	4	Peebles,	35	9	2
Edinburgh,	1462	2	6	Renfrew,	562	17	1
Elgin,	105	17	11	Ross and Cromarty,	253	2	1
Lanark,	1345	0	10	Stirling,	332	15	5
Kirkcudbright,	144	14	7	Zetland,	76	5	9
Orkney,	88	10	11				
Carry forward,	£3628	10	11	Total,	£4889	0	5

There was a provision in the old Acts for enabling the local authorities in any county to consent to an addition to the maximum sum which the General Board could estimate for. The only additional assessment for the year 1860 was applicable to the County of Renfrew, and amounted to £698, 16s. 6d. Addition to maximum Assessment.

A further element in the accounts for this department is the operations on cash-credit accounts negotiated on the security of the assessments. In some instances these accounts were established and operated on by the General Board; in other instances they were so adjusted as to be operated on by the County Boards.

The monies to be accounted for in this department thus consist of—

1*st*, Estimated Assessments.
2*d*, Additional Assessment by consent.
3*d*, Cash-Credit Accounts.

RECEIPTS—BEING CHARGE.

Balance at credit of last account, viz.:						
Arrears and Interest,	£2962	17	3			
Cash in Bank,	8556	16	2			
				£11,519	13	5
Twentieth year's assessment as above,				4,889	0	5
Additional assessment, viz., on the County of Renfrew,				698	16	6
Remittances paid into Local Prisons' account, with interest,				352	7	9
Due on special credits, to the following Counties, viz.:—						
Banff, Clackmannan, Edinburgh, Kirkcudbright, Lanark, Renfrew, Sutherland,				5,306	3	10
Sum of Charge,				£22,766	1	11

EXPENDITURE—BEING DISCHARGE.

Assessments received and paid into Bank,	£2,115	17	6
Retention of Assessments paid into Banks to special credit-accounts,	1,462	2	6
Retentions by County Boards,	307	15	10
Cash due to County Boards on special credits,	5,306	3	10
Cash drawn from Local Prisons' Accounts and remitted to County Boards,	350	0	0
Cash in Bank, Local Prisons' Account,	8,559	3	11
Balance being arrears carried to next Account,	4,664	18	4
Sum of Discharge,	£22,766	1	11

The sum here stated as cash in bank, £8559, 3s. 11d., was held by the General Board for the following counties, in the proportions stated opposite to each.

Orkney and Zetland jointly,	£130	7	4
Orkney,	1179	5	9
Zetland,	1455	11	2
Forfar,	2865	5	1
Dumfries,	225	12	6
Nairn,	150	11	2
Selkirk,	1	17	7
Inverness,	414	6	11
Lanark,	72	18	2
Stirling,	2062	19	0
Dumbarton,	0	9	3
	£8559	3	11

Under the provision above referred to, these sums came into our possession, for the purpose of being remitted to the respective County Boards, and the remittances will fall to be accounted for in our First Annual Report. We have, in the same manner, to account for a portion of the sum of £5306, 3s. 10d., stated as due on special credits. The Counties of Edinburgh and Banff had their special credits at their own order, and the balance at the credit of the former was £2796, 12s. 6d., while that at the credit of the latter was £18, 2s. 7d. The remainder, amounting to £2491, 8s. 9d., for which we have to account, is thus divided,—

Special Credit Accounts kept in name of the General Board with the Bank of Scotland for Building, &c., Prisons in the following Counties,—

1. Clackmannan,	£44	7	8
2. Kirkcudbright,	1351	9	5
3. Lanark,	329	9	5
4. Renfrew,	668	10	5
5. Sutherland,	97	11	10
	£2491	8	9

Current Expenses of County Boards.

Current Annual Expenses of the County Boards, including Aliment of Prisoners, &c.—The sums to be raised for this purpose did not enter the accounts of the General Board, but were payable directly to the County Boards, and remain at their disposal.

In pursuance of the 38th section of the Original Act, the County Boards determined the amount of assessment required to be imposed on their several Counties, for the current annual expenses of their Prisons, and these sums were, as usual, apportioned in the manner stated in their Concluding Report. The aggregate amount of these assessments for the last year was £30,519, 3s. 4d. In this department of expenditure, County Boards are aided by the amount advanced from Exchequer for the maintenance of convicted prisoners. It amounted last year to £4260, 1s. 6d.

In the preceding statement it will be seen that the various sums rendered available since the General Board's last Report, for Prison purposes in Scotland, were the following :—

I. Leviable by Assessment—						
Assessment for Building, Altering, and Repairing Local Prisons,	£4,889	0	5			
Additional Assessments for the same purpose,	698	16	6			
Assessment for current expenses of Local Prisons,	30,519	3	4			
				£36,107	0	3
II. Funds voted by Parliament—						
To Local Boards for maintenance of Prisoners,	£4,260	1	6			
To the General Board for current expenses of General Prison,	15,692	0	0			
To the same for ordinary and special works at the General Prison,	3,850	0	0			
To the same for the expenses of the Board, Removal of Convicts, and Miscellaneous Purposes,	2,645	0	0			
				26,447	1	6
				£62,554	1	9

Table of Assessments and Population for 1860.

App. No. XVII.

For your further information we have thrown into one Table the whole assessments imposed on the several counties in Scotland, under the Prisons' Acts, during the year 1860, and the apportionment of such assessments among the several landward parts of counties and burghs, specifying also their relative population. This Table appears in the Appendix.

Aggregate Sums imposed under the Acts.

The aggregate amount of sums assessed on the several counties in Scotland, and apportioned by the General Board, since the commencement, is con-

tained in the following Table, which brings down to the end of the year 1860, the Tabular Statements of the General Board's twenty-one Reports :—

Sums raised by Assessment.

Period.	Building, &c., General Prison under § 35 of the Original Act as amended and continued.	Building Local Prisons under § 36 of the Original Act as amended and continued.	Current Expenses of General Prison and of General Board for 1843 and preceding years,—of General Prison for 1844, and of General Board for the period of that year prior to 1st September,—and of General Prison for 1845, and for the period of 1846 prior to 1st October of that year, under § 37 of the Original Act as amended and continued.	Current Expenses of Local Prisons under § 38 of the Original Act as amended and continued.	Interest and Redemption of Debt due by Prison Board of Forfarshire to Burgh of Dundee, under § 25 of the Original Act as amended and continued.	Aggregate of Sums imposed
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1840	2,000 0 0	10,000 0 0	5,000 0 0	30,142 18 0	675 0 0	47,817 18 0
1841	2,000 0 0	13,685 17 8	... ...	28,773 10 3	1,125 0 0	45,584 7 11
1842	2,000 0 0	13,770 8 1	... ...	31,520 7 9	866 5 0	48,157 0 10
1843	2,000 0 0	15,116 13 11	5,722 0 3	36,379 16 0	1,383 15 0	60,602 5 2
1844	2,000 0 0	15,616 13 11	8,517 5 7	33,374 7 3	1,125 0 0	60,633 6 9
1845	1,200 0 0	17,034 13 11	8,261 14 1	31,245 0 0	700 0 0	58,441 8 0
1846	1,200 0 0	16,052 11 11	5,482 1 2	33,544 8 5	837 13 1	57,116 14 7
1847	1,200 0 0	15,317 14 0	3,642 5 8	36,219 12 0	720 0 0	57,099 11 8
1848	1,200 0 0	14,875 14 0	... ...	39,823 10 0	697 10 0	56,596 14 0
1849	1,200 0 0	17,565 13 5[9]	... ...	38,085 11 8	675 0 0	57,526 5 1[9]
1850	1,200 0 0	16,729 10 0	... ...	32,965 8 11	652 10 0	51,547 8 11
1851	1,200 0 0	13,879 0 10	... ...	28,558 12 0	566 5 0	44,203 17 10
1852	1,200 0 0	16,789 3 9	... ...	27,178 0 0	384 0 0	45,551 3 9
1853	1,200 0 0	9,775 16 8	... ...	28,133 2 1	372 0 0	39,480 18 9
1854	1,200 0 0	9,115 13 4	... ...	30,854 4 3	360 0 0	41,529 17 7
1855	1,200 0 0	8,247 8 9	... ...	32,383 16 8	348 0 0	42,179 5 5
1856	1,200 0 0	8,310 0 8	... ...	29,555 9 5	357 0 0	39,422 10 1
1857	1,200 0 0	5,995 6 6	... ...	29,266 3 10	357 0 0	36,818 10 4
1858	900 0 0	5,274 2 9	... ...	30,010 14 1	315 0 0	36,499 16 10
1859	... ...	4,591 11 6	... ...	29,896 3 0	... ...	34,487 14 6
1860	... ...	5,587 16 11	... ...	30,519 3 4	... ...	36,107 0 3
	26,500 0 0	253,331 12 6[9]	36,625 6 9	668,429 18 11	12,516 18 1	997,403 16 3[9]

It appears advisable that, on this occasion, we should also subjoin a Tabular Statement of the various sums advanced to the General Board out of the monies voted by Parliament from the commencement.

Advances by the Treasury.

Year.	Building of General Prison and Repairs.	Current Expenses of General Prison.	Board's Expenses.	Maintenance of Prisoners in Local Prisons.	Removals of Convicts.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1840	10,000 0 0	...	...	...	...
1841	...	...	...	...	...
1842	5,000 0 0	...	...	...	...
1843	...	...	...	...	...
1844	...	...	...	...	...
1845	...	...	1,122 0 0	...	...
1846	...	750 0 0	929 0 0	...	...
1847	1,905 0 0	10,061 10 5	1,198 0 0	8,954 9 6	...
1848	...	6,730 0 0	940 0 0	7,048 15 10	...
1849	1,685 0 0	4,500 0 0	777 0 0	6,962 16 11	...
1850	987 17 1	6,319 16 0	809 0 0	6,360 4 11	...
1851	3,291 6 9	7,528 0 0	806 0 0	6,069 3 2	...
1852	8,691 12 3	4,295 0 0	798 0 0	7,088 7 0	...
1853	5,907 15 7	7,240 0 0	771 0 0	7,125 8 9	...
1854	1,777 19 8	8,975 0 0	807 0 0	8,177 12 7	...
1855	2,230 3 6	9,810 0 0	753 10 0	6,785 2 6	600 0 0
1856	1,053 5 5	10,258 4 5	260 0 0	5,437 15 0	622 16 4
1857	15,673 19 8	10,783 17 5	222 0 0	5,285 5 6	1,000 0 0
1858	12,729 10 3	15,437 0 0	272 0 0	4,521 3 2	1,200 0 0
1859	3,718 0 0	14,058 0 0	297 0 0	4,524 13 2	1,500 0 0
1860	4,286 0 0	14,961 0 0	210 0 0	4,260 1 6	300 0 0
	78,937 10 2	131,707 8 3	10,971 10 0	88,600 19 6	5,222 16 4
Deduct sums paid, being Earnings of Convicts. 1855		443 9 11			
1856		307 11 1			
1857		442 16 9			
1858		515 2 0			
1859		557 15 6			
1860		709 11 2			
		2,976 6 5			
		128,731 1 10			

Amount paid for Maintenance of Convicts in Prison of Ayr, £3262.

Aggregate Advances by Treasury.

Estimates.

The General Board had no occasion during the past year to submit to you their usual estimate of the sums necessary to be raised in the present year, in the shape of a building assessment in those Counties where such a fund is necessary, since the right of imposing such an assessment is, by the new Act, transferred to County Boards. As, however, it is provided that the amount which each County Board may impose as a Building Fund shall not exceed the amount which was or might legally have been estimated for as a Building Fund under the old Act, we subjoin in the following Table a state of the maximum amount applicable to each County. The total Fund, as already stated, was limited by the old Acts to £10,000 over all Scotland, and the apportionment of this sum was made by the General Board, under the directions of the old Acts, on a mixed estimate of population and crime.

Maximum Building Fund.

Table of Maximum Building Assessments which may be levied by County Boards.

Aberdeen,	£734	17	11	Brought forward,	£5727	6	8
Argyle,	328	3	4	Kinross,	88	15	5
Ayr,	434	5	10	Kirkcudbright,	144	14	7
Banff,	128	18	4	Lanark,	1345	0	10
Bute,	47	18	4	Linlithgow,	113	17	11
Berwick,	99	15	10	Nairn,	36	19	2
Caithness,	121	5	10	Orkney,	88	10	11
Clackmannan,	95	16	3	Peebles,	35	9	2
Dumbarton,	157	15	10	Perth,	630	6	3
Dumfries	285	5	5	Renfrew,	562	17	1
Edinburgh,	1462	2	6	Ross & Cromarty,	253	2	1
Elgin,	105	17	11	Roxburgh,	320	14	2
Fife,	454	17	6	Selkirk,	29	19	7
Forfar,	707	13	9	Stirling,	332	15	5
Haddington,	135	6	8	Sutherland,	69	9	7
Inverness,	313	7	1	Wigtown,	143	15	5
Kincardine,	113	18	4	Zetland,	76	5	9
Carry forward,	£5727	6	8		£10,000	0	0

Estimates for Parliament.

The General Board, before it came to an end, transmitted to you estimates of the sums which it was desirable to lay before Parliament as proper to be voted for the department during the ensuing financial year. Among these the estimate for the annual expense of the Board could only be held as data on which the current expenses of the establishment of the Managers could be calculated. The other estimates transmitted by them were the following :—

Current Expenses of General Board and General Prison.

An estimate of the sum necessary to defray the expense of removals of convicts and other prisoners, viz., £1000.

An estimate of the sum necessary to defray the current expenses of the General Prison, viz., £15,261, 7s. 3d.

Expenses of Ordinary and Special Works at General Prison.

The Board also approved of and transmitted to the Chief Commissioner of Her Majesty's Works, in the same manner—

An estimate of the sum necessary to defray the expenses of ordinary works and repairs at the General Prison, viz., £1700; and

An estimate of the sum necessary to defray the expenses of special works at the General Prison, viz., £500.

We have the honour to be,

SIR,

Your very obedient Servants,

J. KINCAID.
EDWARD S. GORDON.
J. H. BURTON.
AND. MURRAY, JR.

APPENDIX.

APPENDIX.

No. I.

List of the Members of the General Board of Directors of Prisons in Scotland from its commencement in 1839.

Members appointed by Her Majesty's Warrant.	Date of Appointment.	Members *ex officio*.	Date of Appointment.
1.	2.	3.	4.
The Marquess of Breadalbane,	1839, Aug. 22	The Right Honourable Charles Hope, Lord Justice-General.	1839, Aug. 17
The Earl of Dalhousie,	.....	The Right Honourable David Boyle, Lord Justice-Clerk.	.....
The Earl of Rosebery,	.....	The Right Honourable Andrew Rutherfurd, Lord Advocate.	.....
Viscount Melville,	.....	James Ivory, Esq., Solicitor-General,	.....
Lord Belhaven,	.....	John Hope, Esq., Dean of the Faculty of Advocates,	.....
The Hon. Fox Maule (now Earl of Dalhousie).	.....	Thomas Maitland, Esq., Solicitor-General,	1840, May 9
Sir William Rae, Baronet,	.....	The Right Honourable John Hope, Lord Justice-Clerk.	1841, October 8
Thomas Maitland, Esq., Advocate,	.....	The Right Honourable Sir William Rae, Bart., Lord Advocate.	1841, Sept. 4
John Shaw Stewart, Esq., Advocate,	.....	Duncan M'Neill, Esq., Solicitor-General,	1841, Sept. 9
Alexander Earle Monteith, Esq., Advocate,	.....	Alexander Wood, Esq., Dean of Faculty,	1841, Nov. 12
Adam Anderson, Esq., Advocate,	.....	The Right Honourable Duncan M'Neill, Lord Advocate.	1842, Oct. 26
Graham Spiers, Esq., Advocate,	.....	Adam Anderson, Esq., Solicitor-General,	1842, Nov. 8
Frederic Hill, Esq., H.M. Inspector of Prisons.	.....	Patrick Robertson, Esq., Dean of Faculty,	1842, Nov. 29
John Wigham, Esq.,	.....	Duncan M'Neill, Esq., Dean of Faculty,	1843, Nov. 25
Lord Dunfermline (in room of Thomas Maitland, Esq., appointed Solicitor-General).	1840, June 24	The Right Honourable Andrew Rutherfurd, Lord Advocate.	1846, July 6
James Ivory, Esq. (Lord Ivory), in room of John Shaw Stewart, Esq., deceased.	1840, July 15	Thomas Maitland, Esq., Solicitor-General,	.....
Andrew Rutherfurd, Esq., in room of Lord Belhaven, resigned.	1841, Aug.	John Thomson Gordon, Esq., Sheriff of Edinburgh.	1847, March 6
Robert Whigham, Esq., Advocate, in room of Sir William Rae, appointed Lord Advocate.	1842, Aug. 3	James Craufurd, Esq., Sheriff of Perthshire,	1849, March 14
The Earl of Mansfield, in room of Lord Dalhousie, resigned.	1843, Oct. 28	James Moncreiff, Esq., Solicitor-General,	1850, Feb. 7
John Cay, Esq., Advocate, in room of Adam Anderson, Esq., appointed Solicitor-General.	.....	The Right Honourable James Moncreiff, Lord Advocate.	1851, April 8
Thomas Maitland, Esq., Advocate, in room of the Earl of Rosebery resigned.	1846, June 22	John Cowan, Esq., Solicitor-General,	1851, May 7
Adam Anderson, Esq., Advocate, in room of Lord Dunfermline, resigned.	1846, Aug. 4	George Deas, Esq., Solicitor-General,	1851, June 28
Robert Graham, Esq., in room of Andrew Rutherfurd, Esq., appointed Lord Advocate.	.....	Adam Anderson, Esq., Dean of Faculty,	1851, May 27
William Murray, Esq. of Henderland, in room of Thomas Maitland, Esq., Solicitor-General.	.....	The Right Honourable Adam Anderson, Lord Advocate.	1852, Feb. 28
Lord Dalmeny, in room of Frederic Hill, Esq.	1849, Nov. 21	John Inglis, Esq., Solicitor-General,	.....
Alexander Murray Dunlop, Esq., Advocate,	1851, July 18	The Right Honourable John Inglis, Lord Advocate.	1852, May 19
Robert Handyside, Esq., Advocate,	.....	Charles Neaves, Esq., Solicitor-General,	1852, May 24
George Makgill, Esq. of Kemback,	.....	John Inglis, Esq., Dean of Faculty,	1852, Nov. 13
Sir William Gibson-Craig, Bart.,	1852, Feb. 21	The Right Honourable James Moncreiff, Lord Advocate.	1852, Dec. 30
Sir William Johnston,	.....	Robert Handyside, Esq., Solicitor-General,	1853, Jan. 17
Sir Alexander Charles Gibson Maitland, Bart.	1853, Dec. 9	James Craufurd, Esq., Solicitor-General,	1853, Nov. 16
Charles Baillie, Esq., Advocate,	.....	David Mure, Esq., Sheriff of Perthshire,	1853, Nov. 28
Edward Francis Maitland, Esq., Advocate,	.....	Thomas Mackenzie, Esq., Solicitor-General,	1855, Jan. 11
William Penney, Esq., Advocate,	1855, April 13	E. F. Maitland, Esq., Solicitor-General,	1855, Feb. 14
Adam Black, Esq., M.P.,	.....	The Right Honourable John Inglis, Lord Advocate.	1858, March 1
Lord Elcho,	1856, March 17	Charles Baillie, Esq., Solicitor-General,	1858, March 17
John Balfour, Esq. of Balbirnie,	.....	The Right Honourable Charles Baillie, Lord Advocate.	1858, July 10
Edward Francis Maitland, Esq., Advocate,	1858, April 22	David Mure, Esq., Solicitor-General,	1858, July 12
Thomas Cleghorn, Esq., Advocate,	1858, Dec. 16	James Moncreiff, Esq., Dean of Faculty,	1858, July 17
		E. S. Gordon, Esq., Sheriff of Perthshire,	1858, July 28
		The Right Honourable David Mure, Lord Advocate.	1859, April 15
		George Patton, Esq., Solicitor-General,	1859, May 3
		The Right Honourable James Moncreiff, Lord Advocate.	1859, June 24
		E. F. Maitland, Esq., Solicitor-General,	1859, June 27

No. II.—A LIST of the DECLARATIONS issued from time to time by the General Board of Directors of Prisons in Scotland, under 2 and 3 Vict. cap. 42, sect. 22.

I.—NEW PRISONS LEGALIZED.

Name.	Date of Declaration.	Purpose.
Glasgow, North-East Wing of Bridewell	Sept. 12, 1840	All descriptions of Prisoners.
Paisley Prison and Bridewell conjoined	Oct. 9, 1840	Do. do.
Two Cells under Court Buildings legalized as part of Cupar Prison	Nov. 13, 1841	Detention before Trial.
General Prison at Perth	March 12, 1842	All descriptions of Criminal.
Largs, Saltcoats, Stewarton, Cumnock	Oct. 9, 1843	Criminal, 10 days.
Dunse, Lauder, Earlston, Coldstream	Jan. 11, 1843	Criminal.
Apartment in the town of Dunfermline legalized as part of Dunfermline Prison	March 11, 1843	All descriptions of Prisoners.
Dunblane	March 27, 1843	Civil; Criminal, 60 days.
Elgin (old Prison discontinued)	April 22, 1843	All descriptions of Prisoners.
Stonehaven (as altered and enlarged)	April 22, 1843	Do. do.
Arbroath	May 12, 1843	Criminal, 3 months.
Airdrie	July 29, 1843	Criminal, 30 days.
Helensburgh	Oct. 9, 1843	Criminal, 10 days.
Aytoun	Oct. 25, 1843	Criminal, 14 days.
Room in Prison of Dingwall legalized as part of Prison	Oct. 16, 1843	All descriptions.
Hawick, Kelso	Feb. 12, 1844	Criminal, 10 days.
Cupar (old Prison discontinued)	March 6, 1844	All descriptions.
Dornoch (old Prison discontinued)	March 6, 1844	Do.
Laurencekirk	March 16, 1844	Criminal, 10 days. Prisoners committed for trial to be removed to Stonehaven.
Forfar (old Prison discontinued)	April 20, 1844	All descriptions.
Brechin	June 17, 1844	Criminal, 10 days.
Two large apartments in Inverness Castle legalized as part of Prison	June 17, 1844	All descriptions.
Leith	Sept. 20, 1844	Criminal, 3 days.
Alloa (new Prison, old Prison discontinued)	July 27, 1844	All descriptions.
Banff (old Prison discontinued)	Nov. 5, 1844	Do. do.
Aberchirder, Keith	Nov. 5, 1844	Criminal, 10 days.
Peebles	Nov. 5, 1844	All descriptions.
Annan	Nov. 5, 1844	Criminal, 10 days.
Kirkintilloch	Nov. 5, 1844	Do.
Inverbervie	Nov. 5, 1844	Criminal, the same as Laurencekirk.
Dunfermline (old Prison discontinued)	Jan. 8, 1845	All descriptions.
Kinross (as altered and enlarged)	April 2, 1845	Do.
Dingwall (old Prison discontinued)	April 2, 1845	Do.
Fort-Charlotte (as altered and enlarged)	April 2, 1845	Do.
Dundee (as altered and enlarged)	May 7, 1845	Do.
Montrose	May 7, 1845	All descriptions of Criminal.
Lamlash	May 7, 1845	Criminal, 10 days.
Perth (as altered and enlarged)	June 25, 1845	All descriptions.
Peterhead	June 25, 1845	Criminal, 60 days.
Linlithgow (old Prison discontinued)	June 25, 1845	All descriptions.
Kirkcaldy	June 25, 1845	Criminal, 30 days.
Pollockshaws	March 18, 1846	Criminal, 10 days.
Nairn (as altered and enlarged)	Aug. 24, 1846	All descriptions.
Tain	Nov. 11, 1846	Civil; and Criminal, 60 days.
Stornoway	Jan. 13, 1847	Civil; and Criminal, 3 months.
Cromarty	March 26, 1847	Civil; and Criminal, 60 days.
Haddington (old Prison discontinued)	March 26, 1847	All descriptions.
Campbeltown (old Prison discontinued)	Oct. 25, 1847	Do.
Edinburgh (as altered and enlarged)	Oct. 25, 1847	Do.

LIST of DECLARATIONS—*continued.*

I.—NEW PRISONS LEGALIZED—*Continued.*

Name.	Date of Declaration.	Purpose.
Stirling (old Prison discontinued)	Oct. 25, 1847	All descriptions.
Annan	Oct. 25, 1847	Criminal, 1 month.
Huntly	Nov. 12, 1847	Criminal, 10 days.
Lochmaddy	March 27, 1848	Civil; and Criminal, 60 days.
Fraserburgh	July 19, 1848	Criminal, 10 days.
Stranraer (old Prison discontinued)	May 22, 1848	All descriptions.
Cullen	Oct. 11, 1848	Criminal, 10 days.
Wigtown (old Prison discontinued)	Sept. 13, 1848	All descriptions.
Inveraray (as altered and enlarged)	Dec. 15, 1848	Do.
Portree	Jan. 10, 1849	Civil; and Criminal, 60 days.
Fort-William	Jan. 25, 1849	Criminal, 60 days.
Inverness (old Prison discontinued)	May 28, 1849	All descriptions.
Lochgilphead	Feb. 22, 1850	Criminal, 10 days.
Forres	May 7, 1850	Do.
Dumfries (west wing and central portion)	Feb. 12, 1851	All descriptions.
Forfar (as altered and enlarged)	Jan. 14, 1852	Do.
Lauder	Nov. 11, 1852	Criminal, 14 days.
Dumfries (east wing)	June 3, 1852	All descriptions.
Kilmarnock (old Prison discontinued)	Jan. 17, 1853	Criminal, 3 months.
Alloa (as altered and enlarged)	Jan. 17, 1853	All descriptions.
Linlithgow (as altered and enlarged)	Feb. 11, 1853	Do.
Ayr (as altered and enlarged)	May 5, 1853	Do.
Glasgow (Drygate Branch)	May 20, 1853	Do.
Paisley (as altered and enlarged)	Aug. 8, 1853	Do.
General Prison (new wing)	June 24, 1853	Criminal.
Dumbarton (as altered and enlarged)	April 9, 1855	All descriptions.
Edinburgh Court Buildings Prison	Dec. 18, 1857	Criminal, 10 days.
Airdrie (as altered and enlarged)	Feb. 11, 1859	All descriptions.
General Prison (new wing)	Feb. 18, 1859	Criminal.

II.—RESTRICTIONS OR OTHER ALTERATIONS ON LEGAL CONDITION OF PRISONS.

New Galloway	July 7, 1840	Discontinued for Civil Prisoners.
Whithorn	July 7, 1840	Do. do.
Annan Lochmaben Sanquhar	July 7, 1840	Do. do.
Edinburgh, Calton Jail and Bridewell united	July 10, 1840	All descriptions.
Aberdeen, Bridewell and Prisons united	Sept. 9, 1840	Do.
Musselburgh Dalkeith	Sept. 12, 1840	Discontinued for Civil Prisoners, and period for Convicted Prisoners limited to 30 days.
Culross	Sept. 12, 1840	Do. do. and period for Convicted Prisoners limited to 8 days.
St. Andrews Crail Kilrenny Anstruther, Easter Anstruther, Wester Pittenweem Earlsferry Dysart Kinghorn Burntisland Inverkeithing Falkland Auchtermuchty Newburgh St. Monance	Sept. 12, 1840	Discontinued for Civil Prisoners and for Convicted Prisoners for a longer period than 8 days.
Irvine	Sept. 24, 1840	Discontinued for Civil Prisoners.
Dunbar North Berwick	Oct. 9, 1840	Do. do.
Rutherglen	Oct. 9, 1840	Do. do.

LIST of DECLARATIONS—*continued.*

II.—RESTRICTIONS OR OTHER ALTERATIONS ON LEGAL CONDITION OF PRISONS—*Continued.*

Name.	Date of Declaration.	Purpose.
Port-Glasgow Renfrew	Oct. 9, 1840	Discontinued for Civil Prisoners.
Glasgow Prison and Bridewell conjoined	Dec. 19, 1840	All descriptions of Prisoners.
Greenock	Dec. 19, 1840	Discontinued for Civil Prisoners.
Canongate	Jan. 12, 1842	To be part of Edinburgh Prison for Civil Prisoners, but to be discontinued in two years.
Airdrie Anderston	June 4, 1842	Period for Convicted Prisoners restricted to 48 hours.
Greenock	June 4, 1842	Discontinued for Convicted Prisoners above 30 days.
Douglas Broomielaw Rutherglen Gorbals Police Cells of Glasgow	Dec. 17, 1842	Period for Convicted Prisoners restricted to 48 hours
Airdrie	July 29, 1843	Period for Convicted Prisoners restricted to 30 days.
Port-Glasgow	March 6, 1844	Period for Convicted Prisoners restricted to 14 days.
Dunbar	June 17, 1844	Period for Convicted Prisoners restricted to 10 days.
Renfrew	April 2, 1845	Period for Convicted Prisoners restricted to 10 days.
Leith	April 2, 1845	Period for Convicted Prisoners 10 days.
Kirkcaldy	June 25, 1845	Discontinued for Civil Prisoners.
Airdrie	June 25, 1845	Period for Convicted Prisoners extended from 30 to 60 days.
Falkirk	March 10, 1847	Discontinued for Convicted Prisoners.
Airdrie	July 26, 1847	Period for Convicted Prisoners restricted from 60 to 30 days.
Annan	Oct. 25, 1847	Period for Convicted Prisoners extended from 10 days to a month.
Cumnock Largs Saltcoats Stewarton Police Cells at Kilmarnock	Jan. 26, 1848	Period for Convicted Prisoners extended from 10 days to 3 months.
Brechin	Oct. 11, 1848	Period for Convicted Prisoners extended from 10 days to a month.
Port-Glasgow	Feb. 14, 1848	Period for Convicted Prisoners restricted from 14 to 4 days.
Forfar	June 19, 1850	Discontinued for Civil Prisoners.
Greenock	May 9, 1850	Period for Convicted Prisoners restricted to 40 days.
Lochgilphead	Nov. 14, 1850	Period for Convicted Prisoners extended from 10 to 40 days.
Airdrie	May 20, 1853	Period for Convicted Prisoners extended from 30 to 40 days.
Leith	April 2, 1855	Period for Convicted Prisoners extended from 3 to 10 days.
Greenock	June 1, 1857	Period for Convicted Prisoners restricted from 40 to 20 days.

III.—PRISONS DISCONTINUED.

Name.	Date of Declaration.	Name.	Date of Declaration.
Old Aberdeen	Jan. 20, 1841	Newport Ferry-Port-on-Craig St. Monance Kilrenny	March 12, 1842
Fortrose	Nov. 13, 1841		
Dalkeith	Feb. 5, 1842		
Crail Falkland Anstruther, Easter Anstruther, Wester Earlsferry Dysart Auchtermuchty	March 12, 1842	Edinburgh Police Office	June 11, 1842
		Carnwath Biggar Strathaven	Dec. 17, 1842
		Whithorn Newton-Stewart	Jan. 11, 1843

LIST of DECLARATIONS—*continued.*

III.—PRISONS DISCONTINUED—*Continued.*

Name.	Date of Declaration.
Glenluce	Jan. 11, 1843
Port-Patrick	
Kilsyth	Jan. 24, 1843
Castle-Douglas	April 22, 1843
New Galloway	
Kingussie	June 11, 1843
Grantown	
Kincardine	
Dunkeld	Dec. 27, 1843
Comrie	
Coupar-Angus	
Alva	Dec. 27, 1843
Kintore	
Inverury	
Huntly	
Turriff	Dec. 27, 1843
Strichen	
Fraserburgh	
Old Meldrum	
Sanquhar	Jan. 10, 1844
Lochmaben	
Culross	March 26, 1844
Burntisland	May 20, 1844
Lock-up at Ayr	
Maybole	
Mauchline	
Katrine	
Galston	
Newmills	Nov. 5, 1844
Kilmaurs	
Kilwinning	
Dalry	
Prestwick	
Keith	
Cullen	
Macduff	Nov. 5, 1844
Dufftown	
Portsoy	
Tomintoul	
Lockerby	
Moffat	Nov. 5, 1844
Langholm	
Gorbals	
Anderston	Nov. 5, 1844
Broomielaw Police Cells	
Threw Lower Police Cells of Calton	Nov. 5, 1844
Rutherglen	
Queensferry	Dec. 4, 1844
Bathgate	
Renfrew	Feb. 12, 1845
Port-Glasgow	
Police Cells of Greenock	April 2, 1845
Kirriemuir	May 7, 1845
Carnoustie	
Inverkeithing	June 25, 1845
Kinghorn	
Creetown	July 15, 1845
Aberchirder	Dec. 8, 1845
Douglas	Sept. 10, 1845
Forres	Sept. 9, 1846
Laurencekirk	May 25, 1846
Inverbervie	
Lauder	Nov. 11, 1846
Coldstream	
St. Andrews	May 26, 1847
Pittenweem	
Newburgh	
Kirkcaldy	Oct. 25, 1847
Canongate	Oct. 25, 1847
Leith	Sept. 8, 1848
Two large Cells in Inverness Prison	May 28, 1849
Calton (Glasgow)	Nov. 1, 1850
Annan	July 26, 1852
Largs	
Cumnock	
Saltcoats	
Stewarton	May 5, 1853
Irvine	
Beith	
Girvan	
Blairgowrie	Dec. 14, 1853
Lauder	Dec. 16, 1853
North Berwick	April 5, 1854
Renfrew	Feb. 12, 1855
Port-Glasgow	
Aytoun	July 15, 1855
Earlston	
Edinburgh Lock-up	July 30, 1856
Lamlash	Dec. 28, 1857

No. III.—A LIST OF THE PRISONS IN SCOTLAND,

With a reference to any Declarations of the General Board defining the purpose for which they are legal.

LOCAL PRISONS.

ABERDEEN—*Aberdeen.*—Legalized in 1840. Consists of two edifices, called the East and West Branches. Second Report, p. 18-20.

Peterhead.—Legalized in 1845. Certain classes of civil prisoners excepted. Period for convicted prisoners, not exceeding 60 days. Seventh Report, p. 10.

Huntly.—Legalized in 1847. All classes of civil prisoners excepted. Period for convicted criminals, not exceeding 10 days. Ninth Report, p. 16.

Fraserburgh.—Legalized in 1848. All classes of civil prisoners excepted. Period for convicted criminals not exceeding 10 days. Tenth Report, p. 15.

ARGYLE—*Inveraray.*—Legalized in 1848. Tenth Report, p. 15.

Campbeltown.—Legalized in 1847. Ninth Report, p. 16.

Tobermory.—Built and in use before the constitution of the Board.

Fort-William.—Common to the Counties of Argyle and Inverness. Legalized in 1849. All classes of civil prisoners excepted. Period for convicted criminals not exceeding 60 days. Eleventh Report, p. 15.

Lochgilphead.—Legalized in 1850. All classes of civil prisoners excepted. Period for convicted criminals not exceeding 30 days. Twelfth Report, p. 16.

10. AYR—*Ayr.*—Legalized in 1853. Fifteenth Report, p. 24.

Kilmarnock.—Legalized in 1853. All classes of civil prisoners excepted. Period for convicted criminals not exceeding three months. Fifteenth Report, p. 25.

BANFF—*Banff.*—Legalized in 1844. Sixth Report, p. 19.

Keith.—Legalized in 1844. Certain classes of civil prisoners excepted. Period for convicted prisoners not exceeding 10 days. Sixth Report, p. 19.

Cullen.—Legalized in 1848. All classes of civil prisoners excepted. Period for convicted criminals not exceeding 10 days. Tenth Report, p. 17.

BERWICK—*Greenlaw.*—Legalized before the constitution of the Board. Fourth Report, p. 17.

Dunse.—Legalized in 1843. Certain classes of civil prisoners excepted. Periods on warrants of imprisonment not exceeding 14 days. Fifth Report, p. 17.

BUTE—*Rothesay.*—Legalized before the constitution of the Board.

Lamlash.—Discontinued from 1st February 1859.

CAITHNESS—*Wick.*—Legalized before the constitution of the Board. Seventh Report, p. 12.

20. CLACKMANNAN—*Alloa.*—Legalized in 1853. Fifteenth Report, p. 26.

DUMBARTON—*Dumbarton.*—Legalized as enlarged and altered in 1855. Seventeenth Report, p. 16.

Helensburgh.—Legalized in 1843. Certain civil prisoners excepted. Period for convicted prisoners, not exceeding ten days. Fifth Report, p. 19.

Kirkintilloch.—Legalized in 1844 in the same terms as Helensburgh. Sixth Report, p. 21.

DUMFRIES—*Dumfries.*—Legalized in 1851 and 1852. Thirteenth Report, p. 21, and Fourteenth, p. 19.

EDINBURGH—*Edinburgh.*—Legalized in 1847. Ninth Report, p. 19. The Court Buildings' Prison, legalized in 1857, is part of the Prison of Edinburgh, for criminal prisoners only, on the condition that none are to be detained in it beyond ten days at a time. Nineteenth Report, p. 12.

Musselburgh.—Legalized in 1840. Certain classes of civil prisoners excepted. Convicted prisoners not to be detained more than 30 days. Fifth Report, p. 21.

ELGIN—*Elgin.*—Legalized in 1843. Fifth Report, p. 21.

Forres.—Legalized in 1850. All classes of civil prisoners excepted. Period for convicted criminals not exceeding 10 days. Twelfth Report, p. 18.

30. FIFE—*Cupar.*—Legalized in 1844. Sixth Report, p. 23, and Fifteenth Report, p. 27.

Dunfermline.—Legalized in 1844. Sixth Report, p. 23.

FORFAR—*Dundee.*—Legalized in 1845. Seventh Report, p. 15.

Forfar.—Legalized in 1852. Fourteenth Report, p. 20.

Montrose.—Legalized in 1845. Certain classes of civil prisoners excepted. Seventh Report, p. 15.

Arbroath.—Legalized in 1843. Certain classes of civil prisoners excepted. Period for convicted prisoners, not extending to 3 months. Fifth Report, p. 23.

Brechin.—Legalized in 1848. All classes of civil prisoners excepted. Period for convicted criminals not extending to 1 month. Sixth Report, p. 24.

HADDINGTON—*Haddington.*—Legalized in 1847. Ninth Report, p. 21.

Dunbar.—Legalized in 1840 and 1845. Certain classes of civil prisoners excepted. Period for convicted prisoners, not exceeding 10 days.

INVERNESS—*Inverness.*—Legalized in 1849. Eleventh Report, p. 19.

Lochmaddy.—Legalized in 1848. Period for convicted 40.
prisoners, not exceeding 60 days. Tenth Report, p. 20.

Portree.—Legalized in 1848, on the same conditions as Lochmaddy. Tenth Report, p. 20.

Fort-William.—Already mentioned as common to the Counties of Argyle and Inverness; it is under the management of the Prison Board of the County of Inverness.

KINCARDINE—*Stonehaven.*—Legalized in 1843. Fifth Report, p. 24.

KINROSS—*Kinross.*—Legalized in 1845. Seventh Report, p. 17.

KIRKCUDBRIGHT—*Kirkcudbright.*—Legalized before the constitution of the Board. Fifth Report, p. 24.

Maxwelltown.—Legalized before the constitution of the Board.

LANARK—*Glasgow.*—Legalized in 1841 and 1853. Fifteenth Report, p. 29.

Hamilton.—Legalized before the constitution of the Board. Fourth Report, p. 23.

Lanark.—Legalized before the constitution of the Board. Fourth Report, p. 23.

Airdrie.—Legalized in 1859.—Fifth Report, p. 25; Fifteenth Report, p. 24; and Twenty-first Report, p. 8.

LINLITHGOW—*Linlithgow.*—Legalized in 1853. Fifteenth 50.
Report, p. 29.

NAIRN—*Nairn.*—Legalized in 1846. Fifth Report, p. 26, and Eighth Report, p. 19.

ORKNEY—*Kirkwall.*—Legalized before the constitution of the Board. Second Report, p. 49.

PEEBLES—*Peebles.*—Legalized in 1844. Sixth Report, p. 27.

PERTH—*Perth.*—Legalized in 1845. Seventh Report, p. 19.

Dunblane.—Legalized in 1843. Period for convicted prisoners, not extending to 3 months. Fifth Report, p. 27.

Police Prison at Perth.—A legal place of confinement for periods not exceeding 3 days.

RENFREW—*Paisley.*—Legalized in 1853. Fifteenth Report, p. 30.

Greenock.—Legalized in 1857. All classes of civil prisoners excepted. Period for convicted criminals, not exceeding 20 days. Fifth Report, p. 28, and Nineteenth Report, p. 13.

Pollockshaws.—Legalized in 1846. Certain civil prisoners excepted. Period for convicted prisoners, not exceeding 10 days. Eighth Report, p. 20.

ROSS & CROMARTY—*Dingwall.*—Legalized in 1845. Seventh 60.
Report, p. 21.

Tain.—Legalized in 1846. Period for convicted prisoners, not exceeding 60 days. Eighth Report, p. 20.

Cromarty.—Legalized in 1847 on the same conditions as Tain. Sixth Report, p. 29, and Ninth, p. 24.

Stornoway.—Legalized in 1846. Period for convicted prisoners, not exceeding 3 months. Eighth Report, p. 20.

ROXBURGH—*Jedburgh.*—Legalized before the constitution of the Board. Tenth Report, p. 23.

Hawick.—Legalized in 1844. Certain civil prisoners excepted. Period for convicted prisoners, not exceeding 10 days. Sixth Report, p. 30.

Kelso.—Legalized in 1844 on the same terms as Hawick. Sixth Report, p. 30.

SELKIRK—*Selkirk.*—Legalized before the constitution of the Board. Third Report, p. 24.

STIRLING—*Stirling.*—Legalized in 1847. Ninth Report, p. 24.

Falkirk.—Discontinued in 1847 as a Prison for convicted prisoners.

SUTHERLAND—*Dornoch.*—Legalized in 1844. Sixth Report, 70
p. 30.

WIGTOWN—*Wigtown.*—Legalized in 1848. Tenth Report, p. 24.

Stranraer.—Legalized in 1848. Tenth Report, p. 24.

ZETLAND—*Lerwick.*—Legalized in 1845. Seventh Report, p. 22.

THE GENERAL PRISON.

74. Declared by the Prisons' Act to be for prisoners sentenced to imprisonment, and for such convicts under sentence of transportation or penal servitude as may be sent thither by Secretary of State's warrants. The Act declares, that every sentence of nine months' imprisonment and upwards may be carried into effect in the General Prison, unless it contains a clause that the prisoner shall not be removed thereto.

No. IV.—Comparative Statement of the average daily Number of Criminal Prisoners in the several Prisons in Scotland, in the five years ending 30th June 1851 and 1856 respectively. Also the number in each of the three years ending 30th June 1857, 1858, 1859, and 1860, compiled from the Reports of the General Board of Directors of Prisons in Scotland.

	Yearly number on an average in the five years ending		In the year ending			
	30th June 1851.	30th June 1856.	30th June 1857.	30th June 1858.	30th June 1859.	30th June 1860.
I. Number of Criminal Prisoners received in the year,	24,185	22,447	18,461	18,930	20,490	20,026
Deduct Numbers received by Transference, viz. :—						
Prisoners removed from one Prison to another in Scotland,	1,335[1]	1,290[1]	1,090	1,008	919	924
Convicts removed from Prisons in England,	.....	36[1]	.....	.....	.....	.....
II. Total Nett Number of Commitments in the year,	22,849[4]	21,120[3]	17,371	17,922	19,571	19,102
III. Ages of Criminal Prisoners received during the year, viz. :—						
Under 16 years,	2,113[2]	1,887[1]	1,389	1,228	1,230	1,062
16 and under 18 years,	1,287	1,504[2]	1,108	984	977	873
18 and under 21 years,	3,688[1]	3,018	2,233	2,478	2,480	2,313
21 and under 50 years,	14,130	13,585	11,432	12,047	13,580	13,494
50 and above,	1,356[4]	1,377[2]	1,233	1,273	1,346	1,538
Total,	22,975[2]	21,372	17,395	18,010	19,613	19,280
IV. Sentences of Criminal Prisoners convicted during the year, viz. :—						
1. To imprisonments for definite periods, viz. :—						
10 days and under,	2,870[4]	2,715[3]	2,126	2,527	2,924	2,668
11 days and not above 60 days,	8,841[2]	8,218	7,368	6,681	6,919	6,511
Above 60 days and under 6 months,	650[1]	640[4]	509	492	529	516
6 months and under 1 year,	721[4]	633[1]	491	417	373	388
1 year and under 2 years,	486[2]	331[4]	286	248	314	222
2 years and under 3 years,	19[3]	6	8	12	4	3
3 years and upwards,	0[3]	.....	.....	.....	3	.....
Total imprisonments for definite periods,	13,599[1]	12,545[2]	10,794	10,377	11,066	10,308
2. To imprisonment for indefinite periods, and not included in imprisonments for definite periods, viz. :—						
1. Until caution be found to keep the peace after conviction,	687[4]	829[2]	437	470	743	573
2. Until or instead of payment of fine or penalty on conviction of offence prosecuted for the public interest,	2,709	3,527[4]	3,365	3,554	4,228	4,793
Total imprisonments for indefinite periods,	3,396[4]	4,357[2]	3,802	4,024	4,971	5,366
3. To Transportation, viz. :—						
7 years,	308[1]	116[4]	.....	.....	.....	.....
10 years,	85[1]	26[3]	.....	.....	.....	.....
14 years,	23[2]	21[4]	12	.....	.....	.....
15 years,	5[1]	17	19	.....	.....	.....
20 years,	1[4]	0[2]	.....	.....	.....	.....
21 years,	1[4]	10[1]	20	.....	.....	.....
Life,	7[4]	7	5	.....	.....	.....
4. To Penal Servitude, viz. :—						
3 years,	.....	.....	.....	30	22	26
4 years,	.....	99[3]	132	113	109	90
Above 4 years and not above 6 years,	.....	34[2]	60	.....	.....	.....
Above 6 years and not above 8 years,	.....	3[4]	2	.....	.....	.....
Above 8 years and not above 10 years,	.....	0[2]	1	.....	.....	.....
5 years,	.....	.....	.....	31	13	8
6 years,	.....	.....	.....	29	31	15
7 years,	.....	.....	.....	15	18	18
8 years,	.....	.....	.....	3	22	18
10 years,	.....	.....	.....	32	16	26
12 years,	.....	.....	.....	2	1	3
15 years,	.....	.....	.....	9	6	2
20 years,	.....	.....	.....	.....	.....	.....
21 years,	.....	.....	.....	10	6	.....
Life,	.....	0[1]	.....	2	4	1
V. Total Sentences to Transportation and to Penal Servitude,	432[3]	336[3]	251	276	248	207
VI. To Death, including Sentences afterwards commuted,	2[3]	3[4]	2	3	.....	2
VII. Grand Total of Sentences,	17,409[1]	17,243[1]	14,849	14,717	16,285	15,883
VIII. Previous imprisonments in the same Prison of Prisoners received, viz. :—						
Once,	3,178[3]	3,316[1]	2,413	2,330	2,712	2,680
Twice,	1,583	1,656	1,260	1,276	1,323	1,270
Thrice,	968[2]	956[3]	872	759	847	858
Four Times,	656	653	581	524	607	605
Five Times,	442[2]	459[3]	402	413	458	460
Six Times and under Ten,	823[1]	862[2]	786	889	1,021	966
Ten Times and under Twenty,	573[3]	677	647	745	847	916
Twenty Times and under Fifty,	259[4]	489[3]	411	458	517	594
Fifty Times and upwards,	10[4]	76[3]	91	78	112	146
Total,	8,521[3]	9,139[1]	7,444	7,472	8,444	8,495
IX. State as to Instruction of Criminal Prisoners on admission :—						
1. Reading,—Could not read,	4,447[4]	4,368[4]	3,842	3,969	3,898	3,777
Read with difficulty,	8,711	10,440	8,617	8,949	9,749	9,579
Read well,	6,869[2]	5,656	4,720	4,570	4,851	4,881
Total,	20,026[1]	20,465[3]	17,179	17,488	18,498	18,237
2. Writing,—Could not write,	9,963[2]	9,655	8,468	8,356	8,656	8,179
Could sign name merely,	1,127[4]	601	595	495	541	490
Write with difficulty,	6,412[1]	8,290[4]	6,576	7,369	7,805	7,872
Write well,	2,248[4]	1,917[1]	1,539	1,268	1,496	1,696
Total,	19,952[1]	20,464	17,179	17,488	18,498	18,237
Had learned more than mere reading and writing,	292[3]	304[2]	244	254	295	290
X. Average daily number in confinement,	2,847	2,666	2,183	2,156	2,211	2,191

No. V.

DIGEST of RETURNS from the PRISON BOARDS of the several COUNTIES, and from the GOVERNOR of the GENERAL confined therein, for the Period beginning on the 1st Day of July 1859, immediately after

	COUNTIES.	PRISONS.	No. of Prison.	Extent of Prison Accommodation.								In Prison at the commencement					
				Criminal Department.				Civil Department.				Criminal.					
				Number of Cells or Rooms for Confinement, viz.—				Number of Cells or Rooms for Confinement, viz.—				Total.			Untried.		
				During Night, or Night and Day.		During Day only.		During Night, or Night and Day.		During Day only.							
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	M.	F.	Tot.
1	Aberdeen	Aberdeen	1	100	44	15	...	7	1	1	...	41	41	82	4	4	8
		Peterhead	2	3	3	...	...	...	...	...	...	1	1	2	...	...	...
		Huntly	3	2	1	...	...	...	...	...	...	...	...	...	...	...	...
		Fraserburgh	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Argyle	Inveraray	5	12	9	...	...	4	...	...	...	5	2	7	2	...	2
		Campbeltown	6	6	3	...	...	1	...	...	...	4	2	6	...	...	...
		Tobermory	7	2	1	...	...	...	...	...	...	...	...	...	...	...	...
		Lochgilphead	8	3	1	...	...	...	...	...	...	...	...	...	...	...	...
3	Ayr	Ayr	9	61	99	...	...	4	1	1	1	17	88	105	5	1	6
		Kilmarnock	10	10	5	...	...	...	...	...	...	9	4	13	2	...	2
4	Banff	Banff	11	12	6	...	...	1	...	...	...	4	1	5	2	...	2
		Keith	12	2	...	...	...	...	...	...	...	...	...	...	...	...	...
		Cullen	13	1	1	...	...	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	16	3	...	...	2	1	...	...	3	1	4	...	...	...
		Dunse	15	4	...	...	...	...	...	...	...	1	1	2	1	1	2
6	Bute	Rothesay	16	6	5	...	...	2	...	...	...	2	1	3	1	1	2
7	Caithness	Wick	17	7	4	...	...	1	1	...	...	5	...	5	2	...	2
8	Clackmannan	Alloa	18	14	6	...	1	1	1	...	...	3	2	5	1	...	1
9	Dumbarton	Dumbarton	19	20	9	...	...	1	...	...	...	16	7	23	4	4	8
		Kirkintilloch	20	2	1	...	...	...	...	...	...	...	...	...	...	...	...
		Helensburgh	21	2	1	...	...	...	...	...	...	..	...	...	...	...	...
10	Dumfries	Dumfries	22	31	14	...	...	1	1	...	...	15	7	22	2	...	2
11	Edinburgh	Edinburgh	23	135	290	...	...	13	2	6	...	196	197	393	30	14	44
		Musselburgh	24	4	1	...	...	...	...	...	...	...	...	...	...	...	...
		Court Buildings	25	11 for both		...	...	...	...	...	...	8	7	15	8	4	12
12	Elgin	Elgin	26	10	...	...	...	2	...	...	...	12	3	15	4	...	4
		Forres	27	4	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	34	15	...	...	1	...	...	...	18	4	22	3	2	5
		Dunfermline	29	12	7	...	...	1	...	...	...	10	2	12	4	...	4
14	Forfar	Dundee	30	66	82	...	...	6	1	2	...	39	38	77	10	10	20
		Forfar	31	27	8	...	...	4	...	1	...	9	6	15	3	2	5
		Montrose	32	8	7	...	...	...	...	...	...	1	...	1	...	..	...
		Arbroath	33	5	2	...	...	...	...	...	...	1	2	3	...	...	...
		Brechin	34	4	...	...	...	...	...	...	...	1	...	1	...	...	...
15	Haddington	Haddington	35	12	6	...	...	2	...	...	...	8	3	11	4	...	4
		Dunbar	36	1	1	...	...	...	...	...	...	...	...	...	...	...	...
16	Inverness	Inverness	37	19	10	...	...	2	...	...	...	9	5	14	2	1	3
		Portree	38	6	...	...	...	1	...	...	...	...	...	...	...	...	...
		Lochmaddy	39	2	2	...	...	1	...	...	...	1	1	2	...	...	...
		Fort-William	40	6	1	...	...	...	...	...	...	...	...	...	...	...	...
17	Kincardine	Stonehaven	41	11	2	...	..	1	...	...	...	3	1	4	2	...	2
18	Kinross	Kinross	42	4	2	...	...	1	1	...	...	2	...	2	2	...	2
19	Kirkcudbright	Kirkcudbright	43	11	3	...	...	2	...	...	...	5	5	10	1	...	1
		Maxwelltown	44	4	...	...	...	...	...	...	...	2	...	2	...	..	...
20	Lanark	Glasgow	45	338	173	3	...	34	2	4	1	205	202	407	34	32	66
		Lanark	46	21	4	...	...	2	...	1	...	8	2	10	3	...	3
		Hamilton	47	24	5	...	2	4	1	1	...	28	7	35	11	4	15
		Airdrie	48	31	12	...	...	4	...	...	...	21	7	28	3	...	3
21	Linlithgow	Linlithgow	49	15	10	...	...	1	...	...	...	8	6	14	...	2	2
22	Nairn	Nairn	50	3	2	...	...	1	...	...	...	2	1	3	2	1	3
23	Orkney	Kirkwall	51	4	2	...	...	1	...	...	...	2	1	3	...	1	1
24	Peebles	Peebles	52	11	...	...	...	1	...	...	...	...	...	...	...	...	...
25	Perth	Perth	53	30	17	2	1	1	1	...	...	28	22	50	3	3	6
		Perth Police Cells	54	5	3	...	...	...	...	...	...	1	...	1	1	...	1
		Dunblane	55	7	2	...	...	1	...	...	..	2	1	3	2	1	3
26	Renfrew	Paisley	56	89	53	...	...	2	1	...	...	42	37	79	7	1	8
		Greenock	57	23	10	...	...	...	...	...	...	10	14	24	4	8	12
		Pollockshaws	58	2	2	...	...	...	...	...	...	...	1	1	...	1	1
27	Ross and Cromarty	Dingwall	59	9	9	...	...	1	...	...	...	5	5	10	1	1	2
		Tain	60	4	1	...	...	1	1	...	...	1	...	1	1	...	1
		Cromarty	61	3	...	...	...	1	...	...	...	...	...	...	...	...	...
		Stornoway	62	5	...	...	...	1	...	...	...	1	...	1	...	...	...
28	Roxburgh	Jedburgh	63	34	8	...	...	2	...	...	...	7	3	10	1	1	2
		Hawick	64	4	...	...	...	...	...	...	..	...	...	...	...	...	...
		Kelso	65	4	...	...	...	...	...	...	...	...	...	...	...	...	...
29	Selkirk	Selkirk	66	6	3	1	...	1	...	...	...	1	1	2	...	...	...
30	Stirling	Stirling	67	35	18	...	...	1	1	...	...	56	28	84	7	9	16
		Falkirk	68	1	1	...	...	...	...	...	...	...	2	2	...	2	2
31	Sutherland	Dornoch	69	8	4	...	...	1	1	...	...	...	1	1	...	...	...
32	Wigtown	Wigtown	70	6	2	...	...	1	...	...	...	4	3	7	2	1	3
		Stranraer	71	6	6	...	...	1	1	...	...	2	1	3	...	1	1
33	Zetland	Fort-Charlotte	72	6	...	...	...	1	...	...	...	...	...	...	...	...	...
25	Perth	General Prison	73	343	495	7	8	...	...	...	...	267	324	591	15	4	19
				1,791	1,497	28	12	126	19	17	2	1,152	1,101	2,253	196	117	313

No. V.

PRISON at PERTH, relative to the ACCOMMODATION in the several Prisons throughout Scotland, and to the PRISONERS Midnight of the preceding Day, and ending on the last day of June 1860, at Midnight of that Day.

of the said Period.			Number received during the said Period.									Total Number in Confinement during the said Period, including Cases of Recommitment.						Number removed to other Prisons in Scotland to undergo the last portion of their Confinement.			No. of Prison.
			Criminal.						Civil.			Criminal.			Civil.			Criminal.			
Convicted.			Civil.			Including Cases of Recommitment within the year.			Not including Cases of Recommitment of the same Prisoner within the year.												
M.	F.	Total.	M.	F	Tot.	M.	F.	Total.	M.	F.	Total.	M.	F.	Tot.	M.	F.	Total.	M.	F.	Tot.	M.	F.	Total.	
37	37	74	4	...	4	438	346	784	368	249	617	58	1	59	479	387	866	62	1	63	10	22	32	1
1	1	2	...	...	...	48	19	67	47	18	65	..	...	...	49	20	69	...	...	...	8	...	8	2
...	...	...	...	...	...	26	7	33	25	6	31	...	...	...	26	7	33	...	...	...	8	2	10	3
...	...	...	...	...	...	17	...	17	14	...	14	...	...	...	17	...	17	...	...	...	...	...	...	4
3	2	5	...	...	...	81	19	100	79	19	98	2	...	2	86	21	107	2	...	2	4	...	4	5
4	2	6	...	...	...	58	31	89	54	30	84	1	...	1	62	33	95	1	...	1	1	1	2	6
...	...	...	...	...	...	9	...	9	9	...	9	...	...	...	9	...	9	...	...	...	5	...	5	7
...	...	...	...	...	...	23	6	29	23	6	29	...	...	...	23	6	29	...	...	...	8	2	10	8
...	...	...	...	...	...	199	79	278	151	51	202	18	...	18	216	167	383	19	...	19	4	79	83	9
12	87	99	1	...	1	143	77	220	117	45	162	...	...	...	152	81	233	...	...	...	12	5	17	10
7	4	11	...	...	...	56	19	75	55	18	73	5	...	5	60	20	80	7	...	7	2	1	3	11
2	1	3	2	...	2	5	4	9	5	4	9	...	...	...	5	4	9	...	...	...	5	2	7	12
...	...	...	...	...	...	10	2	12	10	2	12	...	...	...	10	2	12	...	...	...	2	1	3	13
...	...	...	...	...	...	44	19	63	43	17	60	4	...	4	47	20	67	5	...	5	1	...	1	14
3	1	4	1	...	1	66	16	82	61	15	76	...	...	...	67	17	84	...	...	...	10	5	15	15
...	...	...	...	...	...	35	18	53	34	15	49	6	...	6	37	19	56	6	...	6	...	...	...	16
1	...	1	...	...	...	53	25	78	51	22	73	11	...	11	58	25	83	11	...	11	4	3	7	17
3	...	3	...	...	...	56	20	76	48	20	68	2	...	2	59	22	81	2	...	2	...	...	...	18
2	2	4	...	...	...	209	67	276	206	62	268	8	...	8	225	74	299	10	1	11	1	...	1	19
12	3	15	2	1	3	50	32	82	22	14	36	...	...	...	50	32	82	...	...	...	7	4	11	20
...	...	...	...	...	...	87	28	115	71	22	93	...	...	...	87	28	115	...	...	...	3	4	7	21
...	...	...	...	...	...	202	96	298	178	67	245	24	1	25	217	103	320	27	1	28	...	2	2	22
13	7	20	3	...	3	1779	2611	4420	1508	1496	3004	64	4	68	1975	2838	4813	77	4	81	64	33	97	23
166	183	349	13	...	13	44	15	59	33	11	44	...	...	...	44	15	59	...	..	...	...	...	...	24
..	...	...	...	...	...	437	353	790	418	324	742	...	...	...	445	360	805	...	...	...	...	...	...	25
...	3	3	...	...	...	105	24	129	103	23	126	16	1	17	117	27	144	16	1	17	3	1	4	26
8	3	11	...	...	...	3	1	4	3	1	4	...	...	...	3	1	4	...	...	...	3	1	4	27
...	...	...	...	...	...	158	60	218	155	52	207	9	1	10	176	64	240	10	1	11	3	1	4	28
15	2	17	1	...	1	66	24	90	63	23	86	4	...	4	76	26	102	4	...	4	1	1	2	29
6	2	8	...	...	...	501	483	984	411	292	703	35	1	36	540	521	1061	35	1	36	4	24	28	30
29	28	57	...	...	...	120	32	152	110	30	140	16	...	16	129	38	167	17	...	17	3	3	6	31
6	4	10	1	...	1	62	35	97	58	33	91	...	...	...	63	35	98	...	...	...	...	...	...	32
1	...	1	...	...	...	49	37	86	47	32	79	...	...	...	50	39	89	...	...	...	...	2	2	33
1	2	3	...	...	...	24	26	50	23	21	44	...	...	...	25	26	51	...	...	...	...	...	...	34
1	...	1	...	...	...	132	48	180	121	46	167	2	...	2	140	51	191	2	...	2	1	1	2	35
4	3	7	...	...	...	142	15	157	82	8	90	...	...	...	142	15	157	...	...	...	...	3	3	36
...	...	...	...	...	...	97	48	145	87	38	125	18	...	18	106	53	159	20	...	20	4	1	5	37
7	4	11	2	...	2	9	3	12	9	3	12	...	...	...	9	3	12	1	...	1	1	...	...	38
...	...	...	1	...	1	12	6	18	12	6	18	...	1	1	13	7	20	...	1	1	...	...	...	39
1	1	2	...	...	...	19	2	21	19	2	21	...	...	...	19	2	21	...	...	...	4	...	4	40
...	...	...	...	...	...	64	19	83	62	18	80	3	...	3	67	20	87	9	...	9	1	...	1	41
1	1	2	1	...	1	57	5	62	53	5	58	2	...	2	59	5	64	3	...	3	...	...	...	42
...	...	...	1	...	1	156	34	190	148	32	180	9	...	9	161	39	200	9	...	9	2	...	2	43
4	5	9	...	...	...	11	7	18	11	4	15	...	...	...	13	7	20	...	...	...	3	1	4	44
2	...	2	...	...	...	2024	1558	3582	1657	1096	2753	173	10	183	2229	1760	3989	196	10	206	53	66	119	45
171	170	341	23	...	23	86	14	100	81	14	95	8	...	8	94	16	110	10	...	10	...	...	...	46
5	2	7	2	...	2	444	86	530	407	72	479	14	1	15	472	93	565	16	1	17	16	2	18	47
17	3	20	2	...	2	502	293	795	360	141	501	7	...	7	523	300	823	7	...	7	4	3	7	48
18	7	25	...	...	...	101	42	143	97	40	137	4	...	4	109	48	157	5	...	5	4	1	5	49
8	4	12	1	...	1	24	4	28	23	4	27	3	...	3	26	5	31	3	1	4	...	...	...	50
...	...	...	...	1	1	32	7	39	28	7	35	1	...	1	34	8	42	1	...	1	...	1	1	51
2	...	2	...	...	...	33	6	39	30	6	36	1	...	1	33	6	39	1	...	1	1	...	1	52
...	...	...	...	...	...	346	241	587	322	164	486	14	1	15	374	263	637	18	1	19	11	1	12	53
25	19	44	4	...	4	35	43	78	35	30	65	...	...	...	36	43	79	...	...	...	...	...	...	54
...	...	...	...	...	...	61	6	67	58	6	64	1	...	1	63	7	70	1	...	1	12	...	12	55
...	...	...	...	...	...	512	398	910	452	277	729	25	...	25	554	435	989	27	...	27	15	20	35	56
35	36	71	2	...	2	234	247	481	209	178	387	...	...	...	244	261	505	...	...	...	73	80	153	57
6	6	12	...	...	...	72	17	89	69	17	86	...	...	...	72	18	90	...	...	...	21	4	25	58
...	...	...	...	...	...	64	18	82	62	16	78	2	1	3	69	23	92	3	1	4	1	1	2	59
4	4	8	1	...	1	16	6	22	15	6	21	3	...	3	17	6	23	4	...	4	...	...	...	60
...	...	...	1	...	1	12	1	13	10	1	11	3	...	3	12	1	13	3	...	3	1	...	1	61
...	...	...	...	...	...	47	3	50	45	3	48	...	...	...	48	3	51	2	...	2	1	...	1	62
1	...	1	1	...	1	148	17	165	141	16	157	1	...	1	155	20	175	1	...	1	3	2	5	63
6	2	8	...	...	...	17	2	19	16	2	18	...	...	...	17	2	19	...	...	...	14	1	15	64
...	...	...	...	...	...	31	6	37	28	6	34	...	...	...	31	6	37	...	...	...	11	3	14	65
...	...	...	...	...	...	42	9	51	42	9	51	2	...	2	43	10	53	2	...	2	...	...	...	66
1	1	2	...	...	...	329	157	486	312	118	430	13	...	13	385	185	570	15	...	15	3	10	13	67
49	19	68	2	...	2	76	27	103	73	25	98	...	...	...	76	29	105	...	...	...	50	22	72	68
...	...	...	...	...	...	18	2	20	17	2	19	...	...	...	18	3	21	...	...	...	...	...	...	69
...	1	1	...	...	...	65	17	82	64	16	80	5	1	6	69	20	89	5	1	6	11	4	15	70
2	2	4	..	...	...	52	22	74	52	20	72	6	1	7	54	23	77	6	2	8	1	1	2	71
2	...	2	...	1	1	29	9	38	28	9	37	1	...	1	29	9	38	1	...	1	...	...	..	72
...	...	...	...	...	...																			73
252	320	572	...	...	...	208	298	506	207	298	505	...	...	...	475	622	1097	...	...	...	...	...	...	
956	984	1,940	72	3	75	11,622	8,404	20,026	10,147	5,801	15,948	609	25	634	12,774	9,505	22,279	682	28	710	497	427	924	

(No. V. *Continued.*) Digest of Returns relative to Prisons and Prisoners in Scotland,

	COUNTIES.	PRISONS.	No. of Prison.	Average duration of Confinement of each Criminal Prisoner.	Average daily Number in Confinement during the said Period.						Average daily Number of Criminal the Four Quarters, viz.,					
					Criminal.			Civil.			30th September 1859.			31st December 1859.		
				Days.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1	Aberdeen	Aberdeen	1	28	33	33	66	6	...	6	43	37	80	25	34	59
		Peterhead	2	16	2	1	3	...	...	...	1	...	1	1	1	2
		Huntly	3	...	...	...	...	...	...	...	...	...	...	...	...	...
		Fraserburgh	4	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Argyle	Inveraray	5	32	7	2	9	...	...	...	11	1	12	6	2	8
		Campbeltown	6	31	5	3	8	...	...	...	4	5	9	6	3	9
		Tobermory	7	...	...	...	...	...	...	...	...	...	...	...	...	...
		Lochgilphead	8	...	...	...	...	...	...	...	1	...	1	1	...	1
3	Ayr	Ayr	9	45	22	23	45	3	...	3	19	58	77	23	9	32
		Kilmarnock	10	20	8	5	13	...	...	...	9	5	14	10	5	15
4	Banff	Banff	11	41	6	3	9	...	...	...	5	2	7	6	2	8
		Keith	12	...	...	...	...	...	...	...	...	...	...	...	...	...
		Cullen	13	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	32	4	2	6	1	...	1	2	2	4	4	3	7
		Dunse	15	4	1	...	1	...	...	...	1	...	1	1	...	1
6	Bute	Rothesay	16	25	2	2	4	...	...	...	1	1	2	2	2	4
7	Caithness	Wick	17	26	4	2	6	1	...	1	6	2	8	4	2	6
8	Clackmannan	Alloa	18	32	5	2	7	...	...	...	3	2	5	4	2	6
9	Dumbarton	Dumbarton	19	19	11	4	15	1	...	1	11	7	18	8	7	15
		Kirkintilloch	20	...	...	...	...	...	...	...	...	...	...	...	...	...
		Helensburgh	21	3	1	...	1	...	...	...	1	...	1	1	...	1
10	Dumfries	Dumfries	22	21	13	5	18	2	...	2	16	9	25	18	6	24
11	Edinburgh	Edinburgh	23	26	148	193	341	9	...	9	184	224	408	163	207	370
		Musselburgh	24	...	...	...	...	...	...	...	...	...	...	...	...	...
		Court Buildings	25	5	6	5	11	...	...	...	6	5	11	6	5	11
12	Elgin	Elgin	26	30	10	2	12	1	...	1	14	2	16	12	2	14
		Forres	27	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	24	11	5	16	1	...	1	14	5	19	6	4	10
		Dunfermline	29	33	8	1	9	...	...	...	11	1	12	5	1	6
14	Forfar	Dundee	30	26	36	38	74	3	...	3	37	44	81	37	42	79
		Forfar	31	41	12	7	19	1	...	1	11	7	18	13	9	22
		Montrose	32	22	4	2	6	...	...	...	4	2	6	5	2	7
		Arbroath	33	12	1	2	3	...	...	...	1	2	3	...	1	1
		Brechin	34	7	1	...	1	...	...	...	2	...	2	1	...	1
15	Haddington	Haddington	35	25	9	4	13	...	...	...	9	3	12	11	4	15
		Dunbar	36	2	1	...	1	...	...	...	1	...	1	...	...	...
16	Inverness	Inverness	37	34	8	7	15	1	...	1	7	6	13	6	6	12
		Portree	38	...	...	...	...	...	...	...	...	...	...	...	...	...
		Lochmaddy	39	...	...	...	...	...	...	...	...	...	...	...	...	...
		Fort-William	40	17	1	...	1	...	...	...	1	...	1	1	...	1
17	Kincardine	Stonehaven	41	21	4	1	5	1	...	1	4	1	5	4	...	4
18	Kinross	Kinross	42	12	2	...	2	1	...	1	2	...	2	1	...	1
19	Kirkcudbright	Kirkcudbright	43	4	2	...	2	...	...	...	2	1	3	2	...	2
		Maxwelltown	44	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Lanark	Glasgow	45	38	209	197	406	21	1	22	205	212	417	185	187	372
		Lanark	46	30	7	2	9	2	...	2	6	3	9	9	3	12
		Hamilton	47	23	26	9	35	2	...	2	21	10	31	29	7	36
		Airdrie	48	18	24	16	40	...	...	...	29	14	43	26	16	42
21	Linlithgow	Linlithgow	49	39	11	6	17	1	...	1	10	6	16	9	8	17
22	Nairn	Nairn	50	23	2	...	2	...	...	...	2	...	2	1	...	1
23	Orkney	Kirkwall	51	8	1	...	1	...	...	...	1	1	2	1	1	2
24	Peebles	Peebles	52	10	1	...	1	...	...	...	2	...	2	1	...	1
25	Perth	Perth	53	26	28	18	46	1	...	1	24	18	42	24	17	41
		Perth Police Cells	54	...	...	...	...	...	...	...	...	...	...	...	...	...
		Dunblane	55	21	4	...	4	1	...	1	4	1	5	7	...	7
26	Renfrew	Paisley	56	27	40	34	74	2	...	2	39	41	80	31	34	65
		Greenock	57	14	9	11	20	...	...	...	10	17	27	9	9	18
		Pollockshaws	58	2	1	...	1	...	...	...	1	...	1	1	...	1
27	Ross and Cromarty	Dingwall	59	24	4	2	6	...	...	...	3	3	6	5	1	6
		Tain	60	16	1	...	1	...	...	...	1	...	1	1	...	1
		Cromarty	61	28	1	...	1	...	...	...	1	...	1	5	...	5
		Stornoway	62	14	2	...	2	1	...	1	1	...	1	...	...	...
28	Roxburgh	Jedburgh	63	27	11	2	13	...	...	...	6	2	8	8	1	9
		Hawick	64	...	...	...	...	...	...	...	...	...	...	...	...	...
		Kelso	65	...	...	...	...	...	...	...	...	...	...	...	...	...
29	Selkirk	Selkirk	66	7	1	...	1	...	...	...	1	...	1	1	...	1
30	Stirling	Stirling	67	36	33	18	56	2	...	2	56	23	79	35	22	57
		Falkirk	68	3	1	...	1	...	...	...	1	...	1	1	...	1
31	Sutherland	Dornoch	69	...	...	...	...	...	...	...	...	...	...	...	...	...
32	Wigtown	Wigtown	70	33	6	2	8	...	...	...	4	3	7	6	2	8
		Stranraer	71	28	4	2	6	...	...	...	3	2	5	3	2	5
33	Zetland	Fort-Charlotte	72	10	1	...	1	...	...	...	1	...	1	...	...	...
25	Perth	General Prison	73	233	268	429	697	...	...	...	272	380	652	276	441	717
				36	1,089	1,102	2,191	65	1	66	1,148	1,170	2,318	1,067	1,112	2,179

for the Year ended on the last day of June 1860—*continued.*

(No. V. *Continued.*)

Prisoners during each of that ending						Number at the end of the said Period, viz., at midnight on 30th June 1860.												Number in Confinement under Sentence of Transportation or Penal Servitude.						Greatest number of Criminals, Males and Females, respectively, at any one time, viz.—		No. of Prison.
31st March 1860.			30th June 1860.			Criminal.									Civil.			At Commencement of the said Period.			At the end of the said Period.					
						Total.			Untried.			Convicted.														
M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	
30	30	60	33	30	63	35	26	61	5	7	12	30	19	49	9	1	10	1	1	2	...	...	...	50	47	1
3	1	4	2	...	2	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	8	3	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	4
6	3	9	5	2	7	4	3	7	3	1	4	1	2	3	1	...	1	...	...	...	...	...	...	20	5	5
7	2	9	5	2	7	4	2	6	...	...	...	4	2	6	1	...	1	...	...	...	...	...	...	12	7	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	7
...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	5	1	8
21	10	31	23	13	36	23	13	36	9	4	13	14	9	23	4	...	4	...	32	32	...	1	1	41	38	9
9	4	13	5	7	12	4	3	7	2	...	2	2	3	5	...	...	...	...	...	...	...	...	...	17	12	10
7	2	9	7	4	11	5	4	9	1	3	4	4	1	5	...	...	...	...	...	...	...	...	...	9	6	11
...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	4	1	13
5	2	7	5	2	7	8	3	11	...	...	...	8	3	11	2	...	2	...	...	...	...	...	...	8	4	14
1	...	1	1	...	1	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	5	2	15
2	3	5	1	2	3	1	2	3	...	1	1	1	1	2	...	...	...	...	...	...	...	...	...	7	6	16
2	2	4	4	1	5	8	6	14	1	...	1	7	6	13	...	...	...	...	...	...	...	...	...	9	7	17
6	2	8	4	3	7	...	1	1	...	...	...	...	1	1	..	...	...	1	...	1	...	...	...	10	5	18
14	2	16	12	2	14	3	1	4	2	1	3	1	...	1	...	...	...	...	...	...	...	...	...	24	11	19
...	...	...	...	...	...	...	2	2	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	4	3	20
1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	3	21
10	2	12	9	3	12	10	5	15	6	...	6	4	5	9	2	...	2	...	...	...	...	...	...	29	15	22
114	169	283	130	174	304	154	191	345	21	7	28	133	184	317	9	...	9	5	4	9	9	4	13	211	286	23
...	...	...	...	...	...	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	2	24
6	5	11	5	5	10	5	3	8	5	3	8	...	...	...	...	...	...	...	...	...	...	...	...	15	12	25
8	1	9	7	2	9	6	1	7	...	1	1	6	...	6	3	1	4	1	...	1	...	...	...	20	4	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	27
12	7	19	13	5	18	10	6	16	1	...	1	9	6	15	1	...	1	1	...	1	...	...	...	24	9	28
4	1	5	8	1	9	8	1	9	2	...	2	6	1	7	...	...	...	...	...	...	...	...	...	13	4	29
32	30	62	39	33	72	38	34	72	7	7	14	31	27	58	3	...	3	4	6	10	...	...	...	49	65	30
12	7	19	9	4	13	10	5	15	3	1	4	7	4	11	2	...	2	...	...	...	...	...	...	18	11	31
3	2	5	3	3	6	4	6	10	1	4	5	3	2	5	...	...	...	...	...	...	...	...	...	10	6	32
1	3	4	2	1	3	2	1	3	...	...	...	2	1	3	...	...	...	...	...	...	...	...	...	7	6	33
1	...	1	1	...	1	...	4	4	...	...	...	...	4	4	...	...	...	...	...	...	...	...	...	4	6	34
10	4	14	6	5	11	7	5	12	3	...	3	4	5	9	2	...	2	...	...	...	...	...	...	17	7	35
1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	4	...	4	...	...	...	...	...	...	6	2	36
9	10	19	9	4	13	11	5	16	4	1	5	7	4	11	4	...	4	...	...	...	...	...	...	14	12	37
...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	1	...	1	...	...	...	...	...	...	2	2	38
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	2	39
...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	40
4	1	5	3	1	4	2	1	3	...	...	...	2	1	3	...	...	...	...	...	...	...	...	...	11	3	41
2	...	2	2	...	2	2	...	2	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	5	1	42
2	...	2	2	...	2	9	4	13	2	3	5	7	1	8	2	...	2	...	...	...	...	...	...	19	6	43
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	44
212	189	401	233	196	429	209	223	432	30	31	61	179	192	371	24	1	25	12	10	22	4	1	5	263	246	45
6	1	7	7	2	9	8	2	10	3	...	3	5	2	7	3	...	3	...	...	...	...	...	...	20	5	46
23	7	30	30	10	40	36	8	44	15	...	15	21	8	29	2	...	2	...	...	...	...	...	...	41	15	47
18	15	33	22	19	41	17	19	36	6	7	13	11	12	23	1	...	1	...	..	...	...	...	...	39	25	48
12	7	19	13	2	15	8	...	8	3	...	3	5	...	5	2	...	2	...	...	...	...	...	...	17	11	49
2	1	3	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	2	50
1	...	1	1	...	1	1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	7	2	51
2	...	2	1	...	1	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	5	1	52
30	16	46	31	22	53	41	32	73	7	2	9	34	30	64	2	...	2	...	...	...	4	...	4	42	38	53
...	...	...	...	...	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	4	4	54
4	1	5	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	12	2	55
39	27	66	51	33	84	34	23	57	5	...	5	29	23	52	5	...	5	...	8	8	...	...	...	67	54	56
8	7	15	8	11	19	6	11	17	2	...	2	4	11	15	...	...	...	...	...	...	...	...	...	18	25	57
1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	2	58
5	1	6	3	1	4	3	1	4	1	1	2	2	...	2	1	1	2	...	...	...	...	...	...	13	5	59
...	...	...	1	...	1	...	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	3	2	60
6	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	61
3	...	3	3	...	3	5	...	5	2	...	2	3	...	3	...	...	...	...	...	...	...	...	...	9	1	62
11	1	12	18	1	19	19	3	22	5	...	5	14	3	17	...	...	...	...	...	...	...	...	...	30	6	63
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	64
...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	3	1	65
1	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	3	66
33	17	50	28	10	38	28	8	36	7	3	10	21	5	26	2	...	2	1	3	4	...	...	...	67	30	67
1	...	1	1	...	1	2	...	2	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	6	4	68
...	...	...	...	...	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	3	2	69
4	1	5	9	...	9	12	...	12	3	...	3	9	...	9	1	...	1	...	...	...	...	...	...	14	5	70
4	2	6	6	3	9	6	6	12	2	2	4	4	4	8	...	...	...	...	...	...	...	...	...	7	7	71
2	...	2	2	...	2	3	3	6	3	3	6	...	...	...	...	...	...	...	...	...	...	...	...	7	3	72
275	453	728	245	438	683	233	442	675	14	4	18	219	438	657	...	...	...	...	210	210	...	325	325	287	465	73
1,043	1,051	2,099	1,076	1,057	2,133	1,050	1,123	2,173	192	98	290	858	1025	1,883	90	4	94	26	324	350	17	331	348	1,758	1,647	

(No. V. *Continued.*)

Digest of Returns relative to Prisons and Prisoners in Scotland

COUNTIES.	PRISONS.	No. of Prison.	Greatest Number, including both Sexes, at any one time.						Least Number, including both Sexes, at any one time.						Number who have Escaped during the said Period.					
			Criminal.			Civil.			Criminal.			Civil.			Criminal.			Civil.		
			M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1 Aberdeen	Aberdeen	1	44	47	91	10	1	11	17	27	44	2	...	2	...	...	...	...	...	...
	Peterhead	2	8	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Huntly	3	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Fraserburgh	4	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
2 Argyle	Inveraray	5	20	...	20	1	...	1	2	2	4	...	...	...	...	...	...	...	...	...
	Campbeltown	6	10	7	17	1	...	1	3	2	5	...	...	...	...	...	...	...	...	...
	Tobermory	7	5	...	5	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
	Lochgilphead	8	5	1	6	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
3 Ayr	Ayr	9	17	88	105	5	...	5	16	8	24	1	...	1	...	...	...	...	...	...
	Kilmarnock	10	15	7	22	...	...	...	4	3	7	...	...	...	...	...	...	...	...	...
4 Banff	Banff	11	9	5	14	3	...	3	3	1	4	...	...	...	...	...	...	...	...	...
	Keith	12	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Cullen	13	4	...	4	...	..	..	...	...	...	...	...	...	...	...	...	...	...	...
5 Berwick	Greenlaw	14	8	4	12	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...
	Dunse	15	4	1	5	...	...	...	1	1	2	...	...	...	...	...	...	...	...	...
6 Bute	Rothesay	16	7	4	11	1	...	1	...	1	1	...	...	...	...	...	...	...	...	...
7 Caithness	Wick	17	8	6	14	2	...	2	...	..	...	...	...	...	1	...	1	...	...	...
8 Clackmannan	Alloa	18	10	2	12	1	...	1	...	1	1	...	...	...	...	...	...	...	...	...
9 Dumbarton	Dumbarton	19	24	4	28	2	1	3	3	1	4	...	...	...	...	...	...	...	...	...
	Kirkintilloch	20	4	3	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Helensburgh	21	7	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10 Dumfries	Dumfries	22	29	10	39	5	...	5	2	2	4	1	...	1	...	...	...	...	...	...
11 Edinburgh	Edinburgh	23	193	278	471	16	...	16	136	116	252	5	...	5	...	...	...	...	...	...
	Musselburgh	24	3	2	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Court Buildings	25	11	10	21	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
12 Elgin	Elgin	26	20	2	22	3	1	4	3	...	3	...	...	...	...	...	...	...	...	...
	Forres	27	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
13 Fife	Cupar	28	24	3	27	1	1	2	1	3	4	...	...	...	...	...	...	...	...	...
	Dunfermline	29	13	1	14	2	...	2	3	1	4	...	...	...	...	...	...	...	...	...
14 Forfar	Dundee	30	41	65	106	9	...	9	30	21	51	...	...	...	...	...	...	...	...	...
	Forfar	31	18	11	29	6	...	6	5	3	8	1	...	1	...	...	...	...	...	...
	Montrose	32	8	5	13	...	...	...	1	2	3	...	...	...	...	...	...	...	...	...
	Arbroath	33	6	5	11	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...
	Brechin	34	3	6	9	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..
15 Haddington	Haddington	35	16	6	22	2	...	2	3	3	6	...	...	...	...	...	...	...	...	...
	Dunbar	36	3	1	4	...	...	...	1	1	2	...	...	...	2	...	2	...	...	...
16 Inverness	Inverness	37	14	10	24	4	...	4	3	2	5	...	...	...	...	...	...	...	...	...
	Portree	38	...	2	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Lochmaddy	39	6	...	6	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
	Fort-William	40	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17 Kincardine	Stonehaven	41	11	...	11	2	...	2	...	1	1	...	...	...	...	...	...	...	...	...
18 Kinross	Kinross	42	5	...	5	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...
19 Kirkcudbright	Kirkcudbright	43	19	2	21	2	...	2	3	1	4	...	...	...	...	...	...	...	...	...
	Maxwelltown	44	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20 Lanark	Glasgow	45	260	239	499	27	1	28	170	163	333	15	1	16	1	...	1	...	...	...
	Lanark	46	20	5	25	6	...	6	3	1	4	1	...	1	...	...	...	...	...	...
	Hamilton	47	41	10	51	4	1	5	15	7	22	..	...	...	...	...	...	...	...	...
	Airdrie	48	37	21	58	1	...	1	11	11	22	...	...	...	...	...	...	...	...	...
21 Linlithgow	Linlithgow	49	16	8	24	2	...	2	8	...	8	...	...	...	...	...	...	...	...	...
22 Nairn	Nairn	50	9	...	9	2	...	2	...	...	...	...	...	...	1	...	1	...	...	...
23 Orkney	Kirkwall	51	7	...	7	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
24 Peebles	Peebles	52	4	1	5	1	...	1	1	1	2	...	...	...	...	...	...	...	...	...
25 Perth	Perth	53	40	33	73	5	1	6	15	14	29	1	1	2	...	...	...	...	...	...
	Perth Police Cells	54	4	2	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Dunblane	55	12	...	12	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
26 Renfrew	Paisley	56	67	38	105	7	...	7	23	25	48	...	...	..	...	...	...	...	...	...
	Greenock	57	13	25	38	...	...	...	5	3	8	...	...	...	...	...	...	...	...	...
	Pollockshaws	58	4	2	6	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27 Ross & Cromarty	Dingwall	59	13	1	14	2	...	2	1	1	2	...	...	...	...	...	...	...	...	...
	Tain	60	2	1	3	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Cromarty	61	5	...	5	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Stornoway	62	9	...	9	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...
28 Roxburgh	Jedburgh	63	30	4	34	1	...	1	5	1	6	...	...	...	...	...	...	...	...	...
	Hawick	64	4	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Kelso	65	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29 Selkirk	Selkirk	66	5	3	8	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
30 Stirling	Stirling	67	67	28	95	4	...	4	23	10	33	1	...	1	...	...	...	...	..	...
	Falkirk	68	3	3	6	...	...	...	1	1	2	...	...	...	1	...	1	...	...	...
31 Sutherland	Dornoch	69	3	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32 Wigtown	Wigtown	70	13	1	14	3	...	3	2	...	2	...	...	...	...	1	1	...	...	...
	Stranraer	71	7	7	14	1	1	2	1	1	2	...	...	...	...	...	...	...	...	...
33 Zetland	Fort Charlotte	72	7	1	8	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...
25 Perth	General Prison	73	285	465	750	...	...	...	265	319	584	...	...	...	...	...	...	...	...	...
			1,660	1,497	3,157	159	9	168	790	762	1,552	28	2	30	6	1	7	...	...	...

for the Year ended on the last day of June 1860—*continued.* (No. V. *Continued.*)

Number who have been taken during the said period.						Estimated Average daily Number of Criminal Prisoners in Separate Confinement.			Estimated Average daily Number of Criminal Prisoners not in Separate Confinement, but under immediate and constant Superintendence.			Estimated Average daily Number of Criminal Prisoners neither in Separate Confinement, nor under immediate and constant Superintendence.			Age of Criminal Prisoners received during the said period, as recorded on Admission.												No. of Prison.
Criminal.			Civil.												Under 16 Years.		16 Years and under 18.		18 Years and under 21.		21 Years and under 50.		50 Years and above.		Total.		
M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
..	...	..	...	...	...	33	32	65	...	...	...	...	1	1	19	12	9	13	47	38	308	244	45	24	428	331	1
..	...	...	...	...	...	2	1	3	...	...	...	...	...	...	7	2	2	2	3	1	21	10	7	4	40	19	2
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	2	...	12	3	3	...	18	5	3
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	1	...	2	...	7	...	1	...	17	...	4
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	1	3	7	1	56	13	5	2	78	19	5
..	...	...	...	...	...	7	2	9	...	...	...	...	...	...	4	...	4	...	7	3	38	20	4	7	57	30	6
..	...	...	...	...	...	5	3	8	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	...	4	...	7
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	8	2	3	2	15	4	8
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	2	4	4	25	6	171	72	6	4	212	88	9
..	...	...	...	...	...	22	23	45	...	...	...	...	...	...	5	4	7	8	19	3	96	52	4	5	131	72	10
..	...	...	...	...	...	8	5	13	...	...	...	...	...	...	9	5	2	...	6	1	34	12	3	...	54	18	11
..	...	...	...	...	...	6	3	9	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	12
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	1	8	1	13
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	3	...	5	1	31	13	3	3	43	19	14
..	...	...	...	...	...	4	2	6	...	...	...	...	...	...	9	...	...	...	7	2	33	8	7	1	56	11	15
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	1	4	2	2	2	18	9	6	4	35	18	16
..	...	...	...	...	...	2	2	4	...	...	...	...	...	...	5	5	3	6	9	1	29	10	3	...	49	22	17
1	...	1	...	...	...	1	1	2	...	..	...	...	...	...	3	1	...	2	3	...	46	15	4	2	56	20	18
..	...	...	...	...	...	5	2	7	...	...	...	...	...	...	19	4	8	...	23	6	139	47	19	10	208	67	19
..	...	...	...	...	...	11	4	15	...	...	...	...	...	...	3	1	2	2	1	2	33	21	4	2	43	28	20
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	2	1	2	7	4	71	13	2	3	84	24	21
..	...	...	...	...	...	1	...	1	...	...	...	...	...	...	9	3	7	3	19	25	136	56	31	7	202	94	22
..	...	...	...	...	...	13	5	18	...	...	...	...	...	...	100	60	79	153	186	406	1194	1855	156	184	1715	2608	23
..	...	...	...	...	...	81	140	221	15	..	15	52	53	105	...	...	2	...	3	1	37	7	2	7	44	15	24
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40	19	17	21	53	50	287	240	40	23	437	353	25
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	1	3	1	10	2	72	13	8	6	102	28	26
..	...	...	...	...	...	8	2	10	2	...	2	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	27
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	1	4	2	18	2	90	42	19	12	155	59	28
..	...	...	...	...	...	11	5	16	...	...	...	...	...	...	4	3	4	1	4	1	46	17	7	1	65	23	29
..	...	...	...	...	...	8	1	9	...	...	...	...	...	...	90	3	14	17	43	75	294	348	56	26	497	469	30
..	...	...	...	...	...	34	34	68	...	...	...	2	4	6	12	3	4	2	4	...	90	20	8	4	118	29	31
..	...	...	...	...	...	12	7	19	...	...	...	...	...	...	17	3	...	...	7	...	34	30	4	2	62	35	32
..	...	...	...	...	...	3	2	5	...	...	...	...	...	...	3	...	...	1	6	...	36	29	4	5	49	35	33
..	...	...	...	...	...	...	...	...	...	...	...	1	2	3	4	3	1	4	1	4	16	11	2	4	24	26	34
..	...	...	...	...	...	1	...	1	...	...	...	...	...	...	17	4	6	3	22	5	76	32	10	3	131	47	35
..	...	...	...	...	...	9	4	13	...	...	...	...	...	...	9	...	4	...	8	...	116	11	5	1	142	12	36
..	...	...	...	...	...	1	1	2	...	...	...	...	...	...	17	4	4	1	7	3	58	34	7	5	93	47	37
..	...	...	...	...	...	8	7	15	...	...	...	...	...	...	1	1	...	1	4	...	3	1	1	...	9	3	38
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	9	5	3	...	12	6	39
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	2	1	7	1	4	...	15	2	40
..	...	...	...	...	...	1	...	1	...	...	...	...	...	...	13	3	2	2	5	1	35	11	8	2	63	19	41
..	...	...	...	...	...	4	1	5	...	...	...	...	...	...	...	...	4	...	3	...	46	4	4	1	57	5	42
..	...	...	...	...	...	2	...	2	...	...	...	...	...	...	13	2	3	1	17	1	114	23	7	7	154	34	43
..	...	...	...	...	...	2	...	2	...	...	...	...	...	...	4	1	...	...	1	...	2	4	1	1	8	6	44
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	82	39	74	69	274	228	1433	1058	123	116	1986	1510	45
1	...	1	...	...	...	162	113	275	3	66	69	44	18	62	6	1	3	1	7	...	68	11	2	1	86	14	46
..	...	...	...	...	...	7	2	9	...	...	...	...	...	...	13	7	13	3	46	8	326	62	30	4	428	84	47
..	...	...	...	...	...	18	3	21	6	4	10	2	2	4	28	13	20	13	54	23	342	206	54	35	498	290	48
..	...	...	...	...	...	24	13	37	...	...	...	...	3	3	3	1	4	5	4	2	78	28	8	5	97	41	49
..	...	...	...	...	...	11	6	17	...	...	...	...	...	...	3	...	2	...	5	...	14	3	...	1	24	4	50
..	...	...	...	...	...	2	...	2	...	...	...	...	...	...	1	1	2	...	3	...	24	4	2	1	32	6	51
..	...	...	...	...	...	1	...	1	...	...	...	...	...	...	6	...	1	1	3	...	19	3	3	2	32	6	52
..	...	...	...	...	...	1	...	1	...	...	...	...	...	...	36	5	22	25	32	19	207	169	38	22	335	240	53
..	...	...	...	...	...	26	17	43	2	1	3	...	...	...	8	...	...	6	1	6	21	25	5	6	35	43	54
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	...	9	...	34	4	3	1	49	6	55
..	...	...	...	...	...	4	...	4	...	...	...	...	...	...	10	10	14	14	58	35	379	297	37	32	498	388	56
..	...	...	...	...	...	34	28	62	6	6	12	...	...	...	17	3	6	6	24	21	107	126	7	11	161	167	57
..	...	...	...	...	...	9	8	17	...	3	3	...	...	...	8	1	2	2	4	1	36	9	1	...	51	13	58
..	...	...	...	...	...	...	...	...	...	...	...	1	...	1	4	1	5	1	8	1	45	12	2	1	64	16	59
..	...	...	...	...	...	4	2	6	...	...	...	...	...	...	2	...	1	...	...	1	12	5	1	...	16	6	60
..	...	...	...	...	...	1	...	1	...	...	...	...	...	...	2	...	2	...	4	...	3	...	...	1	11	1	61
..	...	...	...	...	...	...	...	...	..	...	...	...	...	...	5	...	6	1	11	...	21	2	3	...	46	3	62
..	...	...	...	...	...	2	...	2	...	...	...	...	...	...	7	...	6	...	16	1	104	12	12	3	145	16	63
..	...	...	...	...	...	11	2	13	...	...	...	...	...	...	2	...	...	...	...	...	1	1	...	...	3	1	64
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	3	...	10	1	4	2	20	3	65
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	3	2	30	5	5	2	42	9	66
..	...	...	...	...	...	1	...	1	...	...	...	...	...	...	24	4	6	9	41	9	224	117	32	16	327	155	67
..	...	...	...	...	...	24	10	34	...	...	...	14	8	22	1	1	2	...	2	...	21	4	...	...	26	5	68
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	4	...	11	1	1	...	18	2	69
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	1	3	...	8	...	34	10	3	2	54	13	70
...	1	1	...	...	...	6	2	8	...	...	...	...	...	...	5	...	3	1	3	5	33	14	7	1	51	21	71
...	...	...	...	...	...	4	1	5	...	1	1	...	...	...	1	...	6	2	4	1	16	4	2	2	29	9	72
...	...	...	...	...	...	1	...	1	...	...	...	...	...	...													
...	...	...	...	...	...	215	354	569	25	...	25	28	75	103	18	2	22	16	31	42	118	212	19	26	208	298	73
2	1	3	...	...	...	873	850	1723	59	81	140	144	166	310	813	249	440	433	1,260	1,053	7,729	5,765	920	618	11,162	8,118	
															1,062		873		2,313		13,494		1,538		19,280		

(No. V. *Continued.*) Digest of Returns relative to Prisons and Prisoners in Scotland,

COUNTIES.	PRISONS.	No. of Prison.	Previous Imprisonments in the same Prison of Criminal Prisoners received during the said Period.																	
			Once before.		Twice.		Three Times.		Four Times.		Five Times.		6 times and under 10.		10 times and under 20		20 times and under 50.		50 times and upwards.		Total.	
			M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	Aberdeen	Aberdeen	1	60	44	30	30	21	25	9	16	12	19	35	49	26	58	3	4	...	...	196	245
		Peterhead	2	1	1	3	2	2	1	...	1	...	...	...	...	...	1	...	...	...	...	6	6
		Huntly	3	4	1	2	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	7	2
		Fraserburgh	4	3	...	...	...	1	...	1	...	2	...	...	...	...	...	...	...	...	...	7	...
2	Argyle	Inveraray	5	6	...	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	9	1
		Campbeltown	6	8	7	6	1	3	3	4	1	1	1	1	1	1	...	...	...	...	...	24	14
		Tobermory	7	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
		Lochgilphead	8	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1
3	Ayr	Ayr	9	31	10	8	9	5	5	2	3	...	...	1	...	1	1	...	...	...	...	48	28
		Kilmarnock	10	20	10	1	9	4	6	...	4	...	1	1	2	...	...	...	...	...	...	26	32
4	Banff	Banff	11	8	2	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	12	2
		Keith	12	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
		Cullen	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	6	4	2	..	2	...	1	...	...	...	...	...	1	...	...	...	...	...	12	4
		Dunse	15	9	3	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	3
6	Bute	Rothesay	16	5	1	1	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	6	4
7	Caithness	Wick	17	8	2	2	2	3	2	3	...	1	...	...	...	...	...	...	...	...	...	17	6
8	Clackmannan	Alloa	18	9	2	4	3	2	...	2	1	3	...	2	...	1	...	...	...	...	...	23	6
9	Dumbarton	Dumbarton	19	21	7	4	4	2	1	1	2	4	1	...	3	...	1	...	...	...	...	32	19
		Kirkintilloch	20	7	4	7	2	2	2	...	1	...	2	5	3	1	...	...	...	...	...	22	14
		Helensburgh	21	7	4	1	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	10	5
10	Dumfries	Dumfries	22	32	15	9	8	7	6	8	6	8	7	8	6	5	6	...	...	...	...	77	54
11	Edinburgh	Edinburgh	23	300	340	187	222	104	160	71	127	50	108	107	209	58	390	19	354	2	53	898	2053
		Musselburgh	24	1	...	3	1	2	2	2	1	1	1	1	2	...	...	2	...	...	...	12	7
		Court Buildings	25	76	66	18	16	6	2	...	...	...	...	...	...	...	...	...	...	...	...	100	84
12	Elgin	Elgin	26	12	2	4	...	4	1	1	3	...	...	...	1	...	...	...	...	...	...	21	7
		Forres	27	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
13	Fife	Cupar	28	21	5	11	1	3	4	4	1	...	1	1	...	1	...	...	3	...	...	41	15
		Dunfermline	29	11	5	6	1	3	...	...	1	1	...	...	...	...	...	...	...	...	...	21	7
14	Forfar	Dundee	30	71	44	44	35	26	24	11	24	8	16	23	29	31	60	7	80	1	51	222	363
		Forfar	31	12	3	4	1	2	...	3	...	3	...	3	...	...	...	...	...	...	...	27	4
		Montrose	32	8	7	5	2	2	...	...	...	...	1	...	...	1	1	...	...	...	...	16	11
		Arbroath	33	8	3	...	...	3	2	5	2	1	1	1	...	...	4	...	1	...	...	18	13
		Brechin	34	3	3	...	...	1	1	...	1	...	1	...	...	...	...	...	...	..	...	4	6
15	Haddington	Haddington	35	18	7	8	...	5	4	7	3	1	...	2	1	...	...	...	...	..	...	41	15
		Dunbar	36	20	1	11	2	5	...	7	...	2	...	8	2	6	2	...	...	...	...	59	7
16	Inverness	Inverness	37	11	4	7	4	5	2	1	2	2	...	6	3	...	6	...	4	...	...	32	26
		Portree	38	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
		Lochmaddy	39	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
		Fort-William	40	2	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...
17	Kincardine	Stonehaven	41	4	3	2	...	3	1	...	...	...	...	...	...	1	...	...	...	...	...	10	4
18	Kinross	Kinross	42	6	1	2	1	2	...	...	...	2	...	...	...	...	...	...	...	...	...	12	2
19	Kirkcudbright	Kirkcudbright	43	18	2	8	1	4	2	...	1	1	...	2	1	1	...	...	...	...	...	34	7
		Maxwelltown	44	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...
20	Lanark	Glasgow	45	287	197	130	120	81	101	49	82	29	64	54	122	27	61	...	9	...	...	657	756
		Lanark	46	8	3	8	...	3	...	1	...	...	...	...	...	1	...	...	...	...	...	21	3
		Hamilton	47	56	13	8	5	5	3	6	2	7	1	9	4	4	4	4	...	...	...	99	32
		Airdrie	48	84	34	11	7	13	17	6	8	5	7	8	15	8	22	7	39	...	3	142	152
21	Linlithgow	Linlithgow	49	11	5	2	1	...	3	1	...	...	1	...	4	...	...	...	...	...	...	14	14
22	Nairn	Nairn	50	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1
23	Orkney	Kirkwall	51	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3
24	Peebles	Peebles	52	2	1	1	...	2	...	1	...	1	...	...	...	...	...	...	...	...	...	7	1
25	Perth	Perth	53	52	30	13	21	13	15	10	9	7	10	14	29	13	14	...	21	...	9	122	158
		Perth Police Cells	54	3	5	...	4	1	2	...	2	...	1	...	7	...	4	...	...	...	...	4	23
		Dunblane	55	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
26	Renfrew	Paisley	56	63	54	33	24	20	16	15	17	15	15	19	28	9	45	1	15	...	26	175	240
		Greenock	57	33	30	18	24	12	19	10	15	7	11	9	18	9	23	4	17	...	...	102	157
		Pollockshaws	58	4	2	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	6	3
27	Ross & Cromarty	Dingwall	59	10	4	3	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	15	6
		Tain	60	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
		Cromarty	61	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
		Stornoway	62	3	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	4	
28	Roxburgh	Jedburgh	63	21	4	13	1	2	...	3	...	2	...	1	...	2	...	...	...	...	...	44	
		Hawick	64	4	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	7	...
		Kelso	65	6	1	1	...	1	...	1	...	1	1	...	...	...	...	...	...	...	...	10	
29	Selkirk	Selkirk	66	2	2	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	5	
30	Stirling	Stirling	67	44	13	14	7	8	7	5	2	2	5	5	9	2	3	...	...	...	...	80	4
		Falkirk	68	7	3	4	1	2	1	...	1	1	...	...	...	...	...	...	...	...	1	14	
31	Sutherland	Dornoch	69	3	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
32	Wigtown	Wigtown	70	5	1	2	2	2	...	...	1	...	...	...	...	...	...	...	...	...	...	9	
		Stranraer	71	3	...	...	1	...	1	1	1	...	1	...	1	...	...	...	...	...	...	4	
33	Zetland	Fort-Charlotte	72	1	1	2	...	1	3	4	...	...	...	...	...	...	...	...	...	...	...	8	
25	Perth	General Prison	73	26	63	4	4	...	...	1	1	...	...	...	...	..	...	...	...	...	.	31	6
				1595	1085	684	586	411	447	263	342	181	279	327	639	210	706	47	547	3	143	3,721	4,7
				2,680		1,270		858		605		460		966		916		594		146		8,495	

for the Year ended on the last day of June 1860—*continued.*

(No. V. *Continued.*)

Criminal Prisoners received during the said period in Local Prisons,* who had been in the General Prison, in so far as known.						Sentences of Criminal Prisoners convicted during the said Period.														No. of Prison.
						To Imprisonment for Definite Periods.														
Once.		More than once.		Total.		10 Days and under.		11 Days and not above 60 Days.		Above 60 Days and under 6 Months.		6 Months and under 1 Year.		1 Year and under 2 Years.		2 Years and under 3 Years.		3 Years and upwards.		Total.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
12	4	1	...	13	4	14	19	134	149	4	2	7	5	...	...	...	...	...	...	159	175	1
1	1	...	...	1	1	12	8	11	2	...	...	...	...	...	...	...	...	...	...	23	10	2
...	...	...	...	...	...	4	4	...	...	...	...	...	...	...	...	...	...	...	...	4	4	3
...	...	...	...	...	...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	12	...	4
1	1	...	...	1	1	17	3	39	7	8	2	...	1	...	...	...	...	...	...	64	13	5
3	...	...	...	3	...	5	8	27	16	7	2	2	1	...	...	...	...	...	...	41	27	6
...	...	...	...	...	...	2	....	1	...	...	...	...	...	...	...	...	...	...	...	3	...	7
...	...	...	...	...	...	6	4	5	...	...	...	...	...	...	...	...	...	...	...	11	4	8
1	1	...	...	1	1	39	11	60	36	26	5	6	4	...	...	...	..	...	...	131	56	9
1	2	...	...	1	2	...	2	46	34	3	2	...	...	...	...	...	...	...	...	49	38	10
...	...	...	...	...	...	6	4	18	7	4	1	3	1	...	...	...	...	...	...	31	13	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
...	...	...	...	...	...	8	1	...	...	...	...	...	...	...	...	...	...	...	...	8	1	13
...	...	...	...	...	...	1	1	32	12	5	3	...	...	...	...	...	...	...	...	38	16	14
...	...	...	...	...	...	17	1	2	1	...	...	...	...	...	...	...	...	...	...	19	2	15
...	...	...	...	...	...	11	2	6	8	1	2	1	2	...	...	...	...	...	...	19	14	16
...	...	...	...	...	...	21	6	16	12	2	1	...	...	...	...	...	...	...	...	39	19	17
...	...	...	...	...	...	18	5	21	10	3	2	...	...	...	...	...	...	...	...	42	17	18
1	...	...	...	1	...	77	36	64	18	9	5	...	1	1	...	...	...	...	...	151	60	19
1	2	...	...	1	2	11	9	...	...	...	...	...	...	...	...	...	...	...	...	11	9	20
...	...	...	...	...	...	57	19	16	4	...	...	...	...	...	...	...	...	...	...	73	23	21
...	...	...	...	...	...	62	47	106	38	1	...	...	...	...	...	...	...	...	...	169	85	22
1	...	...	...	1	...	132	212	649	1057	32	26	27	29	1	1	...	...	...	...	841	1325	23
33	13	...	...	33	13	7	3	2	...	...	...	...	...	...	...	...	...	...	...	9	3	24
...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	25
13	7	...	...	13	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50	16	26
...	...	...	1	...	1	9	4	29	12	10	...	2	...	...	...	...	...	...	...	...	...	27
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	125	54	28
1	1	1	...	2	1	27	10	90	42	6	2	2	...	...	...	...	...	...	...	62	21	29
2	...	...	...	2	...	5	9	49	12	6	...	2	...	...	...	...	...	...	...	189	261	30
8	7	...	...	8	7	69	119	81	109	24	16	15	17	...	...	...	...	...	...	58	13	31
...	...	...	...	...	...	16	3	26	3	13	5	3	2	...	...	...	...	...	...	43	22	32
...	2	...	...	...	2	10	4	33	18	...	...	...	...	...	...	...	...	...	...	35	28	33
...	...	...	...	...	...	21	10	14	18	...	...	...	...	...	...	...	...	...	...	7	10	34
...	...	...	...	...	...	3	4	4	6	...	...	...	...	...	...	...	...	...	...	43	24	35
1	...	...	...	1	...	18	11	24	10	...	...	1	3	...	...	...	...	...	...	121	6	36
...	...	...	...	...	...	117	6	4	...	...	...	...	...	...	...	...	...	...	...	69	48	37
3	1	...	...	3	1	6	1	56	44	4	2	3	1	...	...	...	...	...	...	2	3	38
...	...	...	...	...	...	1	....	1	3	...	...	...	...	...	...	...	...	...	...	...	3	39
...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	13	1	40
...	...	...	...	...	...	7	1	6	...	...	...	...	...	...	...	...	...	...	...	36	5	41
...	...	...	...	...	...	13	1	22	3	1	1	...	...	...	...	...	...	...	...	9	...	42
...	...	...	...	...	...	1	....	8	...	...	...	...	...	...	...	...	...	...	...	45	20	43
...	1	...	...	...	1	14	13	28	7	1	...	2	...	...	...	...	...	...	...	8	6	44
...	...	...	...	...	...	7	5	1	1	...	...	...	...	...	...	...	...	...	...	727	722	45
17	9	...	...	17	9	35	42	604	608	41	25	47	47	...	...	...	...	...	...	43	11	46
1	...	...	...	1	...	8	2	24	4	7	3	4	2	...	...	...	...	...	...	359	74	47
3	1	...	...	3	1	134	29	213	37	6	3	6	5	...	...	...	...	...	...	388	228	48
...	...	...	...	...	...	170	101	212	121	2	2	4	4	...	...	...	...	...	...	52	32	49
1	...	...	...	1	...	9	7	35	18	6	7	2	...	...	...	...	...	...	...	7	2	50
1	...	...	...	1	...	3	1	...	...	3	1	1	...	...	...	...	...	...	...	9	4	51
...	...	...	...	...	...	7	1	2	3	...	...	...	...	...	...	...	...	...	...	12	4	52
3	...	...	...	3	...	4	4	4	...	3	...	1	...	...	...	...	...	...	...	261	213	53
13	2	1	2	14	4	53	63	189	145	6	3	13	2	...	...	...	...	...	...	35	43	54
...	...	...	...	...	...	35	43	...	...	...	...	...	...	...	...	...	...	...	...	34	5	55
1	...	...	...	1	...	1	2	33	3	...	...	...	...	...	...	...	...	...	...	219	175	56
12	5	...	1	12	6	23	28	138	123	43	10	15	14	...	...	...	...	...	...	122	160	57
4	3	...	1	4	4	33	37	89	123	...	...	...	...	...	...	...	...	...	...	1	2	58
...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	29	8	59
...	1	...	...	...	1	15	4	6	4	3	...	5	...	...	...	...	...	...	...	11	4	60
1	...	...	...	1	...	7	2	4	2	...	...	...	...	...	...	...	...	...	...	8	...	61
...	...	...	...	...	...	3	...	3	...	2	...	...	...	...	...	...	...	...	...	23	3	62
...	...	...	...	...	...	13	3	10	...	...	...	...	...	...	...	...	...	...	...	86	9	63
2	...	...	...	2	...	21	2	57	6	7	...	1	1	...	...	...	...	...	...	3	1	64
...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	20	3	65
...	...	...	...	...	...	20	3	...	...	...	...	...	...	...	...	...	...	...	...	32	9	66
1	...	...	...	1	...	21	4	11	5	...	...	...	...	...	...	...	...	...	...	258	144	67
3	2	1	...	4	2	82	65	115	57	57	19	4	3	...	...	...	...	...	...	...	...	68
...	...	...	...	...	...	...	....	...	...	...	...	...	...	...	...	...	...	...	...	7	1	69
...	...	...	...	...	..	3	...	3	1	1	...	...	...	...	...	...	...	...	...	36	5	70
1	...	...	...	1	...	9	2	21	2	6	1	...	...	...	...	...	...	...	...	30	12	71
...	...	...	...	...	...	7	1	21	10	...	...	2	1	...	...	...	...	...	...	17	5	72
...	...	...	...	...	...	8	...	9	5	...	...	...	...	...	...	...	...	...	...			
26	48	5	5	31	53	...	...	....	...	...	...	60	1	127	92	2	1	...	...	189	94	73
164	114	9	10	173	124	1,611	1,057	3,534	2,977	363	153	241	147	129	93	2	1	...	...	5,880	4,428	
278		19		297		2,668		6,511		516		388		222		3		...		10,308		

* Those who were merely received into the Local Prisons to be transferred to the General Prison, and are thus entered in the previous Table as recommitted to the General Prison, are not included under this head.

(No. V. *Continued.*)

Digest of Returns relative to Prisons and Prisoners in Scotland,

	COUNTIES.	PRISONS.	No. of Prison.	Sentences of Criminal Prisoners											
				Imprisonment for Indefinite Periods, and not included in the preceding Classes of Imprisonment for Definite Periods.						To Penal Servitude.					
				Until Caution be found to keep the Peace after Conviction on Criminal Charge.		Until, or instead of Payment of Fine or Penalty on Conviction of Offence, prosecuted for the Public Interest.		Total.		3 Years.		4 Years.		5 Years.	
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	Aberdeen	Aberdeen	1	15	1	194	180	209	131	1	...	2	...	...	...
		Peterhead	2	2	...	10	6	12	6	...	...	...	...	...	...
		Huntly	3	...	...	6	...	6	...	...	...	...	...	...	...
		Fraserburgh	4	...	...	5	...	5	...	...	...	...	...	...	...
2	Argyle	Inveraray	5	...	...	...	...	...	...	...	...	2	...	...	...
		Campbeltown	6	...	...	...	...	...	...	...	...	...	...	...	...
		Tobermory	7	...	...	...	...	...	...	...	...	...	...	...	...
		Lochgilphead	8	...	...	...	...	...	...	...	...	...	...	...	...
3	Ayr	Ayr	9	7	1	38	9	45	10	1	...	...	...	...	...
		Kilmarnock	10	...	...	46	28	46	28	...	...	...	...	...	...
4	Banff	Banff	11	...	...	3	...	3	...	...	...	...	...	...	...
		Keith	12	...	...	...	...	...	...	...	...	...	...	...	...
		Cullen	13	...	...	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	...	...	...	...	...	...	...	...	...	...	...	...
		Dunse	15	...	...	15	2	15	2	...	...	...	...	...	...
6	Bute	Rothesay	16	...	...	11	3	11	3	...	...	...	...	...	...
7	Caithness	Wick	17	...	...	...	...	...	...	...	...	...	...	...	...
8	Clackmannan	Alloa	18	...	...	1	...	1	...	...	...	...	...	...	...
9	Dumbarton	Dumbarton	19	...	...	...	...	...	...	...	...	...	...	...	...
		Kirkintilloch	20	...	...	32	19	32	19	...	...	...	...	...	...
		Helensburgh	21	...	...	...	...	...	...	...	...	...	...	...	...
10	Dumfries	Dumfries	22	...	...	...	...	...	...	...	...	...	...	...	...
11	Edinburgh	Edinburgh	23	246	259	508	1038	754	1297	2	1	8	14	1	...
		Musselburgh	24	...	...	...	...	...	...	...	...	...	...	...	...
		Court Buildings	25	...	...	...	...	...	...	...	...	...	...	...	...
12	Elgin	Elgin	26	4	...	36	4	40	4	...	...	...	...	...	...
		Forres	27	...	...	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	...	...	...	...	...	...	...	...	...	...	...	...
		Dunfermline	29	...	...	...	...	...	...	...	...	...	...	...	...
14	Forfar	Dundee	30	12	3	146	165	158	168	...	...	...	...	...	...
		Forfar	31	1	...	...	...	1	...	...	...	...	...	...	...
		Montrose	32	...	...	...	...	...	...	...	...	...	...	...	...
		Arbroath	33	...	...	...	...	...	...	...	...	...	...	...	...
		Brechin	34	...	...	10	7	10	7	...	...	...	...	...	...
15	Haddington	Haddington	35	1	...	43	12	44	12	...	...	...	...	...	...
		Dunbar	36	...	...	...	...	...	...	...	...	...	...	...	...
16	Inverness	Inverness	37	...	...	...	...	...	...	2	...	...	1	...	...
		Portree	38	...	...	2	...	2	...	...	...	...	...	...	...
		Lochmaddy	39	...	...	5	...	5	...	...	...	...	...	...	...
		Fort-William	40	...	...	...	...	...	...	...	...	...	...	...	...
17	Kincardine	Stonehaven	41	4	...	14	8	18	8	...	...	...	...	...	...
18	Kinross	Kinross	42	...	...	23	...	23	...	...	...	...	...	...	...
19	Kirkcudbright	Kirkcudbright	43	...	...	79	...	79	...	...	...	...	...	...	...
		Maxwelltown	44	...	...	...	...	...	...	...	...	...	...	...	...
20	Lanark	Glasgow	45	...	...	872	703	872	703	5	7	22	18	4	2
		Lanark	46	..	...	15	2	15	2	...	...	...	...	...	...
		Hamilton	47	4	...	...	...	4	...	...	...	...	..	...	...
		Airdrie	48	...	...	...	...	...	...	...	...	...	...	...	...
21	Linlithgow	Linlithgow	49	...	...	20	6	20	6	...	...	...	...	...	...
22	Nairn	Nairn	50	...	...	8	...	8	...	...	...	...	...	...	...
23	Orkney	Kirkwall	51	...	...	4	...	4	...	...	...	...	...	...	...
24	Peebles	Peebles	52	5	...	6	...	11	...	...	...	...	...	...	...
25	Perth	Perth	53	5	...	...	...	5	...	4	2	6	8	...	1
		Perth Police Cells	54	...	...	...	...	...	...	...	...	...	...	...	...
		Dunblane	55	...	...	...	...	...	...	...	...	...	...	...	...
26	Renfrew	Paisley	56	...	...	223	201	223	201	...	...	...	...	...	...
		Greenock	57	...	...	...	...	...	...	...	...	...	...	...	...
		Pollockshaws	58	...	...	38	6	38	6	...	...	...	...	...	...
27	Ross and Cromarty	Dingwall	59	...	1	11	...	11	1	...	...	...	...	...	...
		Tain	60	...	...	...	...	...	...	...	...	...	...	...	...
		Cromarty	61	...	...	...	...	...	...	...	...	...	...	...	...
		Stornoway	62	1	...	15	.	16	...	...	...	...	...	...	...
28	Roxburgh	Jedburgh	63	...	...	...	...	...	...	...	...	...	...	...	...
		Hawick	64	...	...	...	...	...	...	...	...	...	...	...	...
		Kelso	65	...	...	...	...	...	...	...	...	...	...	...	...
29	Selkirk	Selkirk	66	...	...	...	...	...	...	...	...	...	...	...	...
30	Stirling	Stirling	67	...	1	2	...	2	1	...	1	4	5	...	...
		Falkirk	68	...	...	...	...	...	...	...	...	...	...	...	...
31	Sutherland	Dornoch	69	...	...	...	...	...	...	...	...	...	...	...	...
32	Wigtown	Wigtown	70	...	...	...	...	...	...	...	...	...	...	...	...
		Stranraer	71	...	...	1	2	1	2	...	...	...	...	...	...
33	Zetland	Fort-Charlotte	72	...	...	...	...	...	...	...	...	...	...	...	...
25	Perth	General Prison	73	...	...	...	...	...	...	...	...	...	...	...	...
				307	266	2,442	2,351	2,749	2,617	15	11	44	46	5	3
				573		4,793		5,366		26		90		8	

for the Year ended on the last day of June 1860—*continued.* (No. V. *Continued.*)

Convicted during the said Period—*continued.*

To Penal Servitude—*continued.*																		To Death.		Grand Total of Sentences.		No. of Prison.
6 Years.		7 Years.		8 Years.		10 Years.		12 Years.		15 Years.		20 Years.		21 Years.		Life.		Total.					
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	2	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	377	306	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35	16	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	4	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	66	13	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41	27	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	4	8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	177	66	9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	95	66	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34	13	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	1	13
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	38	16	14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34	4	15
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30	17	16
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39	19	17
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	43	17	18
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	151	60	19
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	43	28	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	73	23	21
...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	2	2	...	...	171	87	22
4	2	4	...	6	2	4	1	1	...	...	...	...	...	...	...	...	...	30	20	1	...	1,626	2,642	23
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	3	24
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	90	20	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	125	54	28
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	62	21	29
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	347	429	30
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59	13	31
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	43	22	32
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35	28	33
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	17	34
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	87	36	35
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	121	6	36
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	72	49	37
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	3	38
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	3	39
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	1	40
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	54	13	41
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32	...	42
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	124	20	43
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	6	44
5	1	5	4	5	2	8	2	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1,655	1,461	45
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	58	13	46
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	363	74	47
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	388	228	48
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	72	38	49
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	2	...	...	15	2	50
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	4	51
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	4	52
1	1	3	...	1	...	3	1	1	...	1	...	...	...	...	...	...	1	20	14	...	1	286	228	53
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35	43	54
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34	5	55
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	442	376	56
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	122	160	57
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39	8	58
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40	9	59
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	4	60
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	61
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39	3	62
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	86	9	63
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	64
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20	3	65
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32	9	66
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	6	...	...	265	151	67
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	68
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	1	69
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	36	5	70
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	31	14	71
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	5	72
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	189	94	73
11	4	14	4	14	4	20	6	3	..	2	...	...	...	...	...	...	1	128	79	1	1	8,758	7,125	
15		18		18		26		3		2						1		207		2		15,883		

(No. V. *Continued.*) Digest of Returns relative to Prisons and Prisoners in Scotland,

	COUNTIES.	PRISONS.	No. of Prison.	Sentences to Punishment by Whipping of Juvenile Male Offenders.				Sentences to Imprisonment							
				To be Whipped only.	To be Whipped in addition to Imprisonment.	To be Whipped in addition to Imprisonment accompanied with Hard Labour.	Total.	10 Days and under.		11 Days and not above 60 Days.		Above 60 Days and under 6 Months.		6 Months and under 1 Year.	
				M.	M.	M.		M.	F.	M.	F.	M.	F.	M.	F.
1	Aberdeen	Aberdeen	1	...	...	...	...	1	...	20	3	9	1	...	...
		Peterhead	2	5	...	...	5	1	...	1	...	...	...	...	...
		Huntly	3	...	...	...	...	1	...	...	...	...	...	...	...
		Fraserburgh	4	...	...	...	...	...	...	...	...	...	...	...	...
2	Argyle	Inveraray	5	...	...	...	...	...	...	...	...	2	...	...	...
		Campbeltown	6	...	...	...	...	...	...	8	...	...	...	...	...
		Tobermory	7	...	...	...	...	...	...	...	...	...	...	...	...
		Lochgilphead	8	...	...	...	...	...	...	...	...	...	...	...	...
3	Ayr	Ayr	9	...	...	...	...	2	1	17	2	8	...	...	...
		Kilmarnock	10	...	...	...	...	...	...	1	...	...	...	...	...
4	Banff	Banff	11	...	...	...	...	1	...	2	1	...	...	...	...
		Keith	12	...	...	...	...	...	...	...	...	...	...	...	...
		Cullen	13	...	...	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	...	...	...	...	...	...	12	3	3	1	...	...
		Dunse	15	7	...	...	7	...	...	...	...	...	...	...	...
6	Bute	Rothesay	16	...	...	...	...	...	...	...	...	1	...	...	...
7	Caithness	Wick	17	...	...	...	...	...	...	2	...	2	...	...	...
8	Clackmannan	Alloa	18	...	...	...	...	...	...	4	...	...	...	...	...
9	Dumbarton	Dumbarton	19	...	...	...	...	...	...	...	...	...	...	...	...
		Kirkintilloch	20	...	...	...	...	...	...	...	...	...	...	...	...
		Helensburgh	21	...	...	...	...	...	...	...	...	...	...	...	...
10	Dumfries	Dumfries	22	...	...	...	...	22	12	23	7	...	...	...	...
11	Edinburgh	Edinburgh	23	4	3	...	7	7	3	185	323	19	3	7	...
		Musselburgh	24	...	...	...	...	...	...	...	...	...	...	...	...
		Court Buildings	25	...	...	...	...	...	...	...	...	...	...	...	...
12	Elgin	Elgin	26	...	2	...	2	...	1	9	1	1	...	...	...
		Forres	27	...	...	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	13	...	...	13	...	...	6	...	...	...	...	...
		Dunfermline	29	...	...	...	...	2	...	5	...	...	...	...	...
14	Forfar	Dundee	30	27	5	2	34	103	174	6	6	...	...	...	...
		Forfar	31	4	...	...	4	13	...	...	...	...	...	...	...
		Montrose	32	...	...	...	...	...	...	4	1	...	...	...	...
		Arbroath	33	...	...	...	...	6	3	11	13	...	...	...	...
		Brechin	34	...	...	...	...	...	1	1	1	...	...	...	...
15	Haddington	Haddington	35	...	...	...	...	...	...	3	...	...	...	...	...
		Dunbar	36	...	...	...	...	...	...	...	...	...	...	...	...
16	Inverness	Inverness	37	...	1	...	1	2	...	1	...	...	...	...	...
		Portree	38	...	...	...	...	...	...	...	...	...	...	...	...
		Lochmaddy	39	...	...	...	...	...	...	...	...	...	...	...	...
		Fort-William	40	...	...	...	...	...	...	...	...	...	...	...	...
17	Kincardine	Stonehaven	41	...	...	...	...	...	...	9	1	...	...	...	...
18	Kinross	Kinross	42	...	...	...	...	...	...	...	...	...	...	...	...
19	Kirkcudbright	Kirkcudbright	43	12	...	...	12	8	...	43	1	1	...	...	...
		Maxwelltown	44	...	...	...	...	1	...	1	...	...	...	...	...
20	Lanark	Glasgow	45	...	...	...	...	2	...	59	5	10	...	4	...
		Lanark	46	...	...	...	...	18	...	3	3	2	...	...	...
		Hamilton	47	...	...	...	...	19	2	110	10	13	3	...	2
		Airdrie	48	...	...	...	...	...	...	33	3	...	...	...	...
21	Linlithgow	Linlithgow	49	...	...	...	...	1	...	4	...	...	...	...	...
22	Nairn	Nairn	50	...	...	...	...	...	...	...	...	...	...	...	...
23	Orkney	Kirkwall	51	...	...	...	...	...	...	...	...	...	...	...	...
24	Peebles	Peebles	52	2	...	...	2	...	1	1	...	...	...	...	...
25	Perth	Perth	53	...	...	...	...	...	...	5	...	...	...	...	...
		Perth Police Cells	54	...	...	...	...	...	...	...	...	...	...	...	...
		Dunblane	55	...	...	...	...	...	...	...	...	...	...	...	...
26	Renfrew	Paisley	56	...	...	...	...	...	...	11	2	10	...	...	1
		Greenock	57	...	...	...	...	...	...	...	2	...	...	...	...
		Pollockshaws	58	...	...	...	...	...	...	...	...	...	...	...	...
27	Ross and Cromarty	Dingwall	59	...	...	...	...	...	...	...	...	...	...	2	...
		Tain	60	...	...	...	...	...	...	...	...	...	...	...	...
		Cromarty	61	...	...	...	...	...	...	...	...	...	...	...	...
		Stornoway	62	...	...	...	...	...	...	2	...	...	...	...	...
28	Roxburgh	Jedburgh	63	...	3	...	3	2	...	12	1	4	...	1	...
		Hawick	64	...	...	...	...	1	...	...	...	...	...	...	...
		Kelso	65	...	...	...	...	19	3	...	...	...	...	...	...
29	Selkirk	Selkirk	66	...	...	...	...	...	...	2	...	...	...	...	...
30	Stirling	Stirling	67	...	5	...	5	...	...	62	10	39	10	4	...
		Falkirk	68	...	...	...	...	...	...	...	...	...	...	...	...
31	Sutherland	Dornoch	69	...	...	...	...	1	...	...	...	...	...	...	...
32	Wigtown	Wigtown	70	...	...	...	...	...	1	4	1	...	...	...	...
		Stranraer	71	...	...	...	...	...	...	4	...	...	...	...	...
33	Zetland	Fort-Charlotte	72	...	...	...	...	9	...	6	3	...	...	...	...
25	Perth	General Prison	73	...	...	...	...	...	...	...	...	...	...	9	...
				74	19	2	95	242	202	692	403	124	18	27	5
				95				444		1,095		142		32	

for the Year ended on the last day of June 1860—*continued.* (No. V. *Continued.*)

accompanied with Hard Labour.								Insane Prisoners.														No. of Prison.
1 Year and under 2 Years.		2 Years and under 3 Years.		3 Years and upwards.		Total.		In Prison at commencement of period.		Received during the period, viz., Committed as dangerous Lunatics.		Found by the Court to be unfit for Trial.		On Trial found to have been Insane.		Became Insane after Commitment to Prison.		Other Descriptions.		Total.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
						30	4	...	...	...	...	1	1	...	...	...	...	...	...	1	1	1
...	..	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	..	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	2	...	...	...	3	1	...	...	...	...	...	...	...	...	3	1	5
...	...	..	...	...	...	8	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	6
...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	7
...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	27	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
...	...	...	...	...	...	15	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	17
...	...	...	...	...	...	4	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	18
..	...	...	...	...	...	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	19
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22
...	...	...	...	...	...	45	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23
...	...	...	...	...	...	218	329	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1	26
...	...	...	...	...	...	10	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	28
...	...	...	...	...	...	6	...	...	...	3	...	...	...	1	...	...	...	...	...	...	...	29
...	...	...	..	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30
...	...	...	...	...	...	109	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	31
...	...	...	...	...	...	13	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	32
...	...	...	...	...	...	4	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	33
...	...	...	...	...	...	17	16	...	...	...	...	...	..	...	...	...	...	...	...	..	...	34
...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35
...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	36
...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	37
...	...	...	...	...	...	3	...	...	...	2	...	...	...	...	...	1	...	...	...	3	...	38
...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	39
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41
...	...	...	...	...	...	9	1	...	...	2	...	...	...	...	...	...	...	...	...	2	...	42
...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	43
...	...	...	...	...	...	52	1	...	1	2	4	...	...	...	...	...	...	...	...	2	5	44
...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	45
...	...	...	...	...	...	75	5	...	...	...	...	...	...	...	...	...	...	1	...	1	...	46
...	...	...	...	...	...	23	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47
...	...	...	...	...	...	142	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	48
...	...	...	...	...	...	33	3	...	...	2	...	...	...	...	...	...	...	...	...	2	...	49
...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50
...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	2	1	51
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	52
...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	53
...	...	.	...	...	...	5	...	...	...	4	...	...	...	...	...	...	...	...	...	4	...	54
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	55
...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	56
...	...	...	...	...	...	21	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	57
...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	58
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59
...	...	...	...	...	...	2	...	...	...	...	...	2	2	...	...	...	...	1	...	3	2	60
...	...	..	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	61
...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	..	...	...	...	...	1	62
...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	3	...	63
...	...	...	...	...	...	2	...	...	...	3	...	...	...	...	...	...	...	...	...	3	...	64
...	...	...	...	...	...	19	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	65
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	66
...	..	...	...	...	...	19	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	67
...	...	...	...	...	...	2	..	...	...	1	...	...	...	...	...	...	...	...	...	2	...	68
...	...	...	...	...	...	105	22	...	...	...	...	...	...	2	...	...	...	...	...	...	...	69
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	70
...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	71
...	...	...	...	...	...	4	2	...	...	3	...	...	...	...	...	...	1	...	...	3	1	72
...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	73
...	...	...	...	...	...	15	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	24	...	21	10	...	...	...	...	...	...	6	4	...	...	27	14	
14	...	1	...	...	...																	
14	...	1	...	...	...	1,100	628	21	11	36	9	3	3	4	1	8	6	2	3	74	33	
14		1		...		1,728		32		45		6		5		14		5		107		

(No. V. *Continued.*)

Digest of Returns relative to Prisons and Prisoners in Scotland,

	COUNTIES.	PRISONS.	No. of Prison.	Insane Prisoners—*continued.*										Revenue Prisoners included in the foregoing Tables.					
				Died.		Discharged.		Removed to Lunatic Asylum.		In Prison at the end of the Period.		Total.		Whereof there were received during the period into the Lunatic Department of the General Prison.		Imprisoned until Payment of Fine or Penalty.		Otherwise Imprisoned.		In Prison at the end of the Period.	
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	Aberdeen	Aberdeen	1	...	...	...	...	1	1	...	...	1	1	...	...	2	1	...	...	1	...
		Peterhead	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Huntly	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Fraserburgh	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Argyle	Inveraray	5	...	...	...	...	2	1	1	...	3	1	...	...	...	...	...	...	...	...
		Campbeltown	6	...	...	...	...	1	1	...	...	1	1	...	...	...	...	...	...	...	...
		Tobermory	7	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
		Lochgilphead	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Ayr	Ayr	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Kilmarnock	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Banff	Banff	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Keith	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Cullen	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Dunse	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Bute	Rothesay	16	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
7	Caithness	Wick	17	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
8	Clackmannan	Alloa	18	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...
9	Dumbarton	Dumbarton	19	...	...	...	...	1	...	...	...	1	...	...	...	...	2	...	...	...	...
		Kirkintilloch	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Helensburgh	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	Dumfries	Dumfries	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Edinburgh	Edinburgh	23	...	...	...	...	...	...	...	...	...	...	...	...	13	22	...	...	1	10
		Musselburgh	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Court Buildings	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Elgin	Elgin	26	...	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...
		Forres	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	...	...	...	...	4	...	...	...	4	...	...	...	...	...	...	...	...	...
		Dunfermline	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Forfar	Dundee	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Forfar	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Montrose	32	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
		Arbroath	33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Brechin	34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Haddington	Haddington	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Dunbar	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16	Inverness	Inverness	37	...	...	...	...	1	...	2	...	3	...	...	...	...	...	...	...	...	...
		Portree	38	...	...	1	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...
		Lochmaddy	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Fort-William	40	...	...	...	...	...	..	...	...	...	...	...	...	...	1	...	...	...	...
17	Kincardine	Stonehaven	41	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...	...	...	...
18	Kinross	Kinross	42	...	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...	...	...
19	Kirkcudbright	Kirkcudbright	43	...	...	1	3	1	1	...	1	2	5	...	...	...	...	...	...	...	...
		Maxwelltown	44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Lanark	Glasgow	45	...	...	1	...	...	...	...	...	1	...	...	...	2	3	5	...	3	1
		Lanark	46	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Hamilton	47	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Airdrie	48	...	...	...	...	2	...	...	...	2	...	...	...	1	...	...	...	...	...
21	Linlithgow	Linlithgow	49	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
22	Nairn	Nairn	50	...	...	2	1	...	...	...	...	2	1	...	...	...	...	...	...	...	...
23	Orkney	Kirkwall	51	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
24	Peebles	Peebles	52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	Perth	Perth	53	...	...	...	...	4	...	...	...	4	...	...	...	1	...	...	...	...	...
		Perth Police Cells	54	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Dunblane	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
26	Renfrew	Paisley	56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Greenock	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Pollockshaws	58	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
27	Ross and Cromarty	Dingwall	59	...	...	1	...	2	2	...	...	3	2	...	...	...	...	...	...	...	...
		Tain	60	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
		Cromarty	61	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
		Stornoway	62	...	...	...	...	2	...	1	...	3	...	...	...	...	...	...	...	...	...
28	Roxburgh	Jedburgh	63	...	...	3	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...
		Hawick	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		Kelso	65	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	Selkirk	Selkirk	66	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...
30	Stirling	Stirling	67	...	...	1	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...
		Falkirk	68	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	Sutherland	Dornoch	69	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...
32	Wigtown	Wigtown	70	...	...	...	...	3	...	...	...	3	...	...	1	...	...	...	...	...	...
		Stranraer	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
33	Zetland	Fort-Charlotte	72	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...
25	Perth	General Prison	73	...	3	6	2	...	...	21	9	27	14	...	...	...	...	...	...	...	...
				...	3	17	8	32	12	25	10	74	33	...	1	22	30	9	...	5	1
				3		25		44		35		107		1		52		9		16	

for the Year ended on the last day of June 1860—*continued*. (No. V. *Continued.*)

General Conduct in Prison of Criminal Prisoners in Confinement during the said Period.								Punished for Misconduct in Prison of Criminal Prisoners in confinement during the said Period.														No. of Prison.
								Ages of Prisoners who have incurred Punishment.										Cases and Description of Punishments.				
Good.		Tolerable.		Bad.		Total.		Under 16.		16 Years and under 18.		18 Years and under 21.		21 Years and under 50.		50 Years and above.		Total.		Number deprived for a time of Work.		Number Punished by changes in quantity or quality of Food.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
468	363	8	19	3	5	479	387	2	...	2	1	4	7	11	8	1	...	20	16	...	...	29	17	1
47	19	2	1	...	...	49	20	...	...	...	...	...	...	2	1	...	...	2	1	...	...	2	1	2
26	7	...	...	...	...	26	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
12	...	4	...	1	...	17	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
83	20	1	1	2	...	86	21	1	...	...	2	1	...	4	...	...	...	6	2	...	...	5	4	5
56	28	4	5	2	...	62	33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
9	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
23	6	...	...	...	...	23	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
215	160	...	7	1	...	216	167	...	...	...	...	2	...	3	1	...	...	5	1	...	...	...	...	9
149	76	3	5	...	...	152	81	...	...	...	1	3	...	9	3	...	1	12	5	...	...	13	6	10
49	16	9	4	2	...	60	20	3	...	...	...	...	...	1	...	...	...	4	...	...	...	...	...	11
4	3	...	1	1	...	5	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
10	1	...	...	...	1	10	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
45	20	2	...	...	...	47	20	...	...	1	...	2	...	4	1	1	...	8	1	...	...	12	1	14
67	17	...	...	...	...	67	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
37	15	...	2	...	2	37	19	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	3	16
49	16	4	1	5	8	58	25	1	3	...	3	1	...	3	2	...	...	5	8	...	...	5	8	17
52	15	6	7	1	...	59	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18
221	73	4	1	...	...	225	74	...	...	...	...	...	...	4	...	...	...	4	...	...	...	4	...	19
50	32	...	...	...	...	50	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
87	26	...	...	...	2	87	28	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	2	21
216	103	1	...	...	...	217	103	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	22
1907	2793	43	25	25	20	1975	2838	15	5	20	8	5	8	9	9	1	...	50	30	...	...	67	21	23
44	15	...	...	...	...	44	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
363	331	82	29	...	...	445	360	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
115	26	2	1	...	...	117	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26
3	1	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27
166	64	7	...	3	...	176	64	...	...	1	...	...	...	4	...	...	...	5	...	7	...	...	...	28
69	26	2	...	5	...	76	26	1	...	1	...	3	...	...	...	...	...	5	...	...	...	5	...	29
524	507	10	12	6	2	540	521	11	1	4	2	2	7	4	20	1	1	22	31	...	...	30	40	30
125	37	4	1	...	...	129	38	...	...	1	...	...	...	1	1	1	...	3	1	...	...	4	1	31
63	35	...	...	...	...	63	35	1	1	...	...	...	...	2	...	...	...	3	1	...	...	3	1	33
50	36	...	1	...	2	50	39	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	33
24	25	1	...	...	1	25	26	...	...	...	...	1	...	...	1	...	...	1	1	...	...	1	1	34
138	51	1	...	1	...	140	51	...	...	...	...	1	...	1	...	...	...	2	...	...	...	1	...	35
142	15	...	...	...	...	142	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	36
100	52	5	1	1	...	106	53	1	...	...	...	...	...	4	...	1	1	6	1	...	...	6	...	37
6	3	3	...	...	...	9	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	38
13	6	...	1	...	...	13	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39
19	2	...	...	...	...	19	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40
58	18	9	2	...	...	67	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41
51	3	8	2	...	...	59	5	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...	42
151	36	8	...	2	3	161	39	1	...	1	...	1	...	2	1	...	...	5	1	...	...	10	1	43
12	6	1	1	...	...	13	7	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	44
2178	1714	41	30	10	16	2229	1760	9	5	16	17	39	23	75	31	6	1	145	77	...	...	182	78	45
89	13	4	1	1	2	94	16	...	...	...	...	2	...	1	...	...	...	3	...	...	...	2	...	46
442	68	21	20	9	5	472	93	3	1	2	2	2	3	10	5	1	...	18	11	24	21	5	2	47
508	279	14	20	1	1	523	300	3	2	...	...	4	2	7	1	...	...	14	5	1	...	23	8	48
107	48	2	...	...	...	109	48	1	...	...	...	...	...	2	...	...	...	3	...	...	...	3	...	49
26	5	...	...	...	...	26	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50
34	8	...	...	...	...	34	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	51
32	6	1	...	...	...	33	6	1	...	...	...	...	...	1	...	...	...	2	...	...	...	3	...	52
308	190	56	66	10	7	374	263	2	...	1	1	...	1	1	5	...	...	4	7	...	...	4	6	53
36	43	...	...	...	...	36	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	54
54	6	8	1	1	...	63	7	1	...	...	...	1	...	3	...	...	...	5	...	...	...	5	...	55
554	433	...	2	...	...	554	435	...	3	...	1	2	1	4	2	...	1	6	8	...	...	6	8	56
243	260	...	...	1	1	244	261	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...	57
72	18	...	...	...	...	72	18	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	58
67	20	1	3	1	...	69	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59
17	6	...	...	...	...	17	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60
12	...	...	...	...	1	12	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	61
35	3	11	...	2	...	48	3	...	...	...	...	...	...	2	...	...	...	2	...	...	...	2	...	62
134	19	14	1	7	...	155	20	2	...	1	...	2	...	6	1	2	1	13	2	...	...	24	2	63
13	1	4	1	...	...	17	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	64
31	6	...	...	...	...	31	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	65
40	10	1	...	2	...	43	10	2	...	...	...	1	...	1	...	...	...	4	...	...	...	7	...	66
367	180	16	1	2	4	385	185	7	...	2	2	3	...	21	3	1	...	34	5	...	...	37	1	67
76	29	...	...	...	...	76	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	68
16	2	2	...	...	1	18	3	...	...	...	1	1	...	...	...	...	...	1	1	...	...	1	1	69
63	12	4	4	2	4	69	20	...	...	...	...	...	...	2	...	...	...	2	...	...	...	2	...	70
52	22	2	1	...	...	54	23	...	...	1	...	...	...	3	3	1	...	5	3	...	...	6	3	71
21	9	8	...	...	...	29	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	72
431	545	16	48	28	29	475	622	6	4	18	20	16	25	11	46	...	...	51	95	15	46	22	1	73
12,176	9,059	460	329	138	117	12,774	9,505	74	25	73	61	101	77	218	150	17	6	483	319	47	67	534	218	
21,235		789		255		22,279		99		134		178		368		23		802		114		752		

(No. V. *Continued.*) Digest of Returns relative to Prisons and Prisoners in Scotland,

	COUNTIES.	PRISONS.	No. of Prison.	Punished for Misconduct in Prison of Criminal Prisoners, &c.—*continued.* Cases and Description of Punishments—*continued.* Number confined in Cells for the Refractory. Light Cells. M.	Light Cells. F.	Dark Cells. M.	Dark Cells. F.	Number on whom were put Irons. M.	Irons. F.	Number otherwise Punished. M.	Otherwise Punished. F.	Total. M.	Total. F.	State as to Instruction of On Admission Reading. Could not Read. M.	Could not Read. F.	Read with difficulty. M.	Read with difficulty. F.
1	Aberdeen	Aberdeen	1	...	...	4	5	..	...	...	...	33	22	75	72	223	201
		Peterhead	2	...	...	...	...	...	...	...	...	2	1	2	3	20	10
		Huntly	3	...	...	...	...	...	...	...	...	...	...	1	1	15	4
		Fraserburgh	4	...	...	...	...	...	...	...	...	...	...	2	...	14	...
2	Argyle	Inveraray	5	...	...	...	...	2	...	...	...	7	4	13	1	18	6
		Campbeltown	6	...	...	...	...	...	...	...	...	...	...	10	7	85	21
		Tobermory	7	...	...	...	...	...	...	...	...	...	...	...	...	3	...
		Lochgilphead	8	...	...	...	...	...	...	...	...	...	...	3	1	12	3
3	Ayr	Ayr	9	...	...	4	1	3	...	...	...	7	1	38	13	58	36
		Kilmarnock	10	...	...	...	...	...	...	...	...	13	6	31	25	42	32
4	Banff	Banff	11	...	...	4	...	...	...	...	...	4	...	1	...	32	11
		Keith	12	...	...	...	...	...	...	...	...	...	...	...	1	...	1
		Cullen	13	...	...	...	.	...	...	...	...	...	...	...	1	...	...
5	Berwick	Greenlaw	14	...	...	...	...	...	...	...	...	12	1	12	7	12	1
		Dunse	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Bute	Rothesay	16	...	...	...	1	...	...	...	...	...	4	4	3	28	15
7	Caithness	Wick	17	...	...	...	...	...	...	...	...	5	8	8	7	39	15
8	Clackmannan	Alloa	18	...	...	...	...	...	...	...	...	...	...	8	7	28	6
9	Dumbarton	Dumbarton	19	...	...	...	...	...	...	...	...	4	...	58	27	144	37
		Kirkintilloch	20	...	...	...	...	...	...	...	...	...	...	16	19	12	9
		Helensburgh	21	...	...	...	...	...	...	...	...	...	2	...	...	...	...
10	Dumfries	Dumfries	22	...	...	...	...	...	...	...	...	1	...	34	23	22	7
11	Edinburgh	Edinburgh	23	...	...	22	36	18	21	1	9	108	87	218	242	1,434	2,347
		Musselburgh	24	...	...	...	...	...	...	...	...	...	...	...	...	30	12
		Court Buildings	25	...	...	...	...	...	...	. .	...	...	...	...	...	...	...
12	Elgin	Elgin	26	...	...	...	...	...	...	...	...	...	...	21	3	59	20
		Forres	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	...	...	...	...	...	...	...	...	7	...	20	8	51	30
		Dunfermline	29	...	...	...	...	1	...	...	...	6	...	14	10	11	5
14	Forfar	Dundee	30	2	2	5	1	4	3	8	3	49	49	127	189	313	251
		Forfar	31	...	...	...	...	...	...	...	...	4	1	11	12	17	6
		Montrose	32	...	...	...	..	...	...	...	...	3	1	6	3	21	21
		Arbroath	33	...	...	...	..	...	...	...	...	...	1	5	6	38	27
		Brechin	34	...	...	...	...	...	...	...	...	1	1	5	3	1	5
15	Haddington	Haddington	35	...	...	...	...	1	...	...	...	2	...	26	16	91	30
		Dunbar	36	...	...	...	...	...	...	...	...	...	...	40	9	65	3
16	Inverness	Inverness	37	...	...	7	1	3	1	...	...	16	2	20	14	41	24
		Portree	38	...	...	...	...	...	...	...	...	...	...	1	2	5	1
		Lochmaddy	39	...	...	...	...	...	...	...	...	...	...	7	5	...	...
		Fort-William	40	...	...	...	...	...	...	...	...	...	...	4	...	9	2
17	Kincardine	Stonehaven	41	...	...	...	...	...	...	...	...	...	...	2	6	31	12
18	Kinross	Kinross	42	...	...	...	...	...	...	...	...	1	...	7	...	19	...
19	Kirkcudbright	Kirkcudbright	43	1	1	...	...	...	...	...	...	11	2	41	8	86	21
		Maxwelltown	44	...	...	...	...	...	...	...	...	...	...	...	3	6	1
20	Lanark	Glasgow	45	...	...	16	11	6	16	...	...	204	105	388	393	347	414
		Lanark	46	...	...	...	...	...	...	1	...	3	...	14	5	39	4
		Hamilton	47	...	...	...	...	1	2	...	...	30	25	87	16	129	31
		Airdrie	48	...	...	...	...	...	2	...	...	24	10	254	144	223	139
21	Linlithgow	Linlithgow	49	...	...	...	...	...	...	...	...	3	...	33	14	62	27
22	Nairn	Nairn	50	...	...	...	...	...	...	...	...	...	...	1	...	21	4
23	Orkney	Kirkwall	51	..	...	...	...	...	...	...	...	...	...	6	...	26	6
24	Peebles	Peebles	52	...	...	...	...	..	...	...	...	3	...	5	2	4	1
25	Perth	Perth	53	..	...	...	1	...	...	...	...	4	7	23	36	254	192
		Perth Police Cells	54	...	...	...	...	...	...	...	...	...	...	..	...	...	..
		Dunblane	55	5	...	...	...	...	...	...	...	10	...	6	...	40	6
26	Renfrew	Paisley	56	...	...	...	...	...	...	...	...	6	8	113	110	225	23
		Greenock	57	...	...	...	...	...	...	...	...	1	...	47	63	48	5
		Pollockshaws	58	...	...	...	..	...	...	...	...	...	...	20	5	13	
27	Ross and Cromarty	Dingwall	59	...	...	...	...	...	...	...	...	...	...	12	7	18	
		Tain	60	...	...	...	...	...	...	...	...	...	...	6	2	2	
		Cromarty	61	...	...	...	...	...	...	...	...	...	...	4	...	5	
		Stornoway	62	...	...	...	...	...	...	...	...	2	...	7	...	24	
28	Roxburgh	Jedburgh	63	...	...	2	...	1	...	...	...	27	2	20	4	123	1
		Hawick	64	...	...	...	...	...	...	...	...	...	...	1	...	2	
		Kelso	65	...	...	...	...	...	...	...	...	...	...	1	...	18	
29	Selkirk	Selkirk	66	...	...	...	...	...	...	...	...	7	...	4	3	10	
30	Stirling	Stirling	67	...	...	2	...	1	4	...	...	40	5	92	51	76	5
		Falkirk	68	...	...	...	...	...	...	...	...	...	...	17	2	7	
31	Sutherland	Dornoch	69	...	...	...	...	...	...	...	...	1	1	3	...	10	
32	Wigtown	Wigtown	70	...	...	...	..	...	...	...	...	2	...	15	4	24	
		Stranraer	71	...	...	...	...	...	...	...	...	6	3	9	5	38	1
33	Zetland	Fort-Charlotte	72	...	...	...	...	...	...	...	...	...	...	4	...	22	
25	Perth	General Prison	73	2	3	62	101	26	55	33	104	160	310	21	50	92	12
				10	6	128	158	67	104	43	116	829	669	2,104	1,673	4,996	4,6
				16		286		171		159		1,498		3,777		9,759	

for the Year ended on the last day of June 1860—*continued.* (No. V. *Continued.*)

Criminal Prisoners in Confinement during the said Period.

during the said Period.																								
				Writing.										Had learned more than mere reading and writing.		Improved during the said Period.								No. of Prison.
Read well.		Total.		Could not Write.		Could sign Name merely.		Write with difficulty.		Write well.		Total.				Have improved in reading or writing, or both.		Have improved in Arithmetic or other branches of Instruction.		Have learned a Trade in Prison.			
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
130	58	428	331	157	233	...	...	253	97	18	1	428	331	5	...	94	38	32	...	13	38	1	
18	6	40	19	14	11	...	...	15	7	11	1	40	19	...	...	...	...	...	...	...	...	2	
2	...	18	5	5	5	...	...	11	...	2	...	18	5	...	...	...	...	...	...	...	...	3	
1	...	17	...	11	...	...	...	5	...	1	...	17	...	...	...	...	...	...	...	...	...	4	
47	12	78	19	28	9	...	...	20	5	30	5	78	19	...	...	3	2	...	...	...	...	5	
12	2	57	30	22	24	28	6	...	...	7	...	57	30	6	...	15	6	2	...	...	...	6	
1	...	4	...	...	...	3	...	1	...	...	...	4	...	...	...	...	...	...	...	...	...	7	
...	...	15	4	8	2	7	2	...	...	...	...	15	4	...	...	...	...	...	...	...	...	8	
116	39	212	88	91	35	...	...	82	41	39	12	212	88	3	2	56	30	6	2	23	16	9	
58	15	131	72	56	63	34	4	32	5	9	...	131	72	...	...	...	...	...	...	...	...	10	
21	7	54	18	9	4	1	2	26	10	18	2	54	18	5	...	29	12	10	...	...	...	11	
..	...	...	2	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	12	
8	...	8	1	...	1	8	...	...	...	...	...	8	1	...	...	...	...	...	...	...	...	13	
19	11	43	19	17	15	...	...	11	1	15	3	43	19	...	...	40	3	7	...	...	...	14	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	
3	...	35	18	9	9	...	...	24	9	2	...	35	18	1	1	1	...	1	...	...	...	16	
2	...	49	22	15	20	...	...	32	2	2	...	49	22	...	...	...	...	...	...	...	...	17	
20	7	56	20	10	14	...	...	46	5	...	1	56	20	...	1	18	4	13	...	4	3	18	
6	3	208	67	90	51	7	2	107	14	4	...	208	67	15	...	10	4	3	...	...	...	19	
15	...	43	28	16	19	...	...	12	9	15	...	43	28	...	...	..	...	...	...	...	...	20	
...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	
146	64	202	94	61	51	...	...	14	7	127	36	202	94	6	...	76	3	6	...	...	...	22	
63	19	1,715	2,608	460	917	...	...	1,216	1,682	39	9	1,715	2,608	...	...	198	268	98	151	...	...	23	
5	3	44	15	12	7	...	...	27	5	5	3	44	15	...	...	...	...	...	...	...	...	24	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25	
22	...	102	23	39	15	...	...	56	8	7	...	102	23	14	...	4	...	2	...	...	...	26	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27	
84	21	155	59	50	32	...	...	97	26	8	1	155	59	...	...	22	14	10	...	...	...	28	
40	8	65	23	19	16	...	...	45	7	1	...	65	23	...	...	25	8	10	...	...	...	29	
57	29	497	469	234	375	...	...	240	94	23	...	497	469	46	3	79	32	28	...	20	17	30	
90	11	118	29	40	16	67	10	...	...	11	3	118	29	...	...	3	2	2	...	...	...	31	
35	11	62	35	19	19	...	...	17	12	26	4	62	35	...	...	...	...	...	...	...	...	32	
6	2	49	35	22	28	25	7	...	...	2	...	49	35	...	...	...	...	...	...	...	...	33	
18	18	24	26	6	9	...	...	6	12	12	5	24	26	...	...	...	...	...	...	...	...	34	
14	1	131	47	58	34	...	...	70	13	3	...	131	47	1	...	1	2	...	...	...	...	35	
37	...	142	12	64	11	...	...	45	1	33	...	142	12	...	...	...	...	...	...	...	...	36	
32	9	93	47	32	28	10	5	33	12	18	2	93	47	7	...	28	14	7	...	12	7	37	
3	...	9	3	3	3	...	...	3	...	3	...	9	3	...	...	1	1	...	...	...	...	38	
5	1	12	6	9	6	2	...	1	...	...	...	12	6	...	...	...	..	...	...	...	...	39	
2	...	15	2	6	1	5	...	2	1	2	...	15	2	...	...	...	...	...	...	...	...	40	
30	1	63	19	15	15	16	4	24	...	8	...	63	19	7	...	2	1	2	..	...	...	41	
31	5	57	5	9	1	...	...	27	2	21	2	57	5	...	...	4	...	2	...	...	...	42	
27	5	154	34	71	22	...	...	82	12	1	...	154	34	1	...	1	1	1	...	...	...	43	
2	2	8	6	4	4	...	...	2	2	2	...	8	6	...	...	...	...	...	...	...	...	44	
1,251	703	1,986	1,510	805	1,018	...	...	612	424	569	68	1,986	1,510	35	...	215	247	38	56	...	...	45	
33	5	86	14	36	9	...	...	43	5	7	...	86	14	7	...	6	1	1	...	...	...	46	
212	37	428	84	194	61	...	...	151	21	83	2	428	84	2	...	30	12	...	...	3	...	47	
21	7	498	290	207	165	104	56	174	63	13	6	498	290	...	...	10	5	2	...	...	...	48	
2	...	97	41	50	29	...	..	45	12	2	...	97	41	2	...	3	1	2	...	...	...	49	
2	...	24	4	4	2	...	...	19	2	1	...	24	4	...	...	1	1	...	...	...	...	50	
...	...	32	6	10	4	...	...	22	2	...	...	32	6	...	...	...	...	...	...	...	...	51	
23	3	32	6	9	2	...	...	9	4	14	...	32	6	...	...	2	...	2	...	...	...	52	
58	12	335	240	93	157	...	...	221	83	21	...	335	240	4	...	18	7	6	2	3	...	53	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	54	
3	...	49	6	19	4	25	1	2	1	3	...	49	6	1	...	3	...	1	...	...	...	55	
160	47	498	388	206	247	...	...	229	121	63	20	498	388	1	1	58	24	...	...	...	...	56	
66	50	161	167	86	129	...	...	46	32	29	6	161	167	26	2	...	...	...	...	...	...	57	
18	1	51	13	24	12	...	...	15	...	12	1	51	13	...	...	...	...	...	...	...	...	58	
34	2	64	16	22	12	...	...	30	4	12	...	64	16	...	...	15	1	15	...	...	...	59	
8	2	16	6	6	2	...	...	2	2	8	2	16	6	...	...	...	...	...	...	...	...	60	
2	...	11	1	6	1	4	...	...	...	1	...	11	1	...	...	1	..	...	...	...	...	61	
15	1	46	3	23	3	...	...	20	...	3	...	46	3	..	...	...	...	...	...	...	...	62	
2	1	145	16	51	7	...	...	92	8	2	1	145	16	3	...	23	...	6	...	...	...	63	
...	...	3	1	3	1	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	64	
1	...	20	3	3	1	...	...	16	2	1	...	20	3	...	...	...	...	...	...	...	...	65	
28	6	42	9	14	3	...	...	18	6	15	...	42	9	2	...	1	2	...	...	...	...	66	
159	50	327	155	140	108	...	...	146	42	41	5	327	155	6	...	45	14	16	...	10	6	67	
2	1	26	5	17	2	4	3	3	...	2	...	26	5	...	...	...	...	...	...	...	...	68	
5	...	18	2	9	2	...	...	8	...	1	...	18	2	...	...	2	...	...	...	1	...	69	
15	5	54	13	24	6	6	2	20	4	4	1	54	13	6	2	1	...	...	...	...	...	70	
4	...	51	21	28	15	...	...	22	6	1	...	51	21	...	...	...	...	...	...	...	...	71	
3	1	29	9	3	6	...	...	24	3	2	...	29	9	...	...	1	...	...	...	...	...	72	
95	127	208	298	43	118	15	15	101	155	49	10	208	298	60	6	197	281	138	48	229	142	73	
3,450	1,431	10,550	7,687	3,926	4,253	571	119	4,769	3,103	1,484	212	10,550	7,687	272	18	1,342	1,041	464	259	338	229		
4,881		18,237		8,179		490		7,872		1,696		18,237		290		2,383		723		567			

No. V. *Continued.*) Digest of Returns relative to Prisons and Prisoners in Scotland,

	COUNTIES.	PRISONS.	No. of Prison.	Sickness and Deaths of Criminal Prisoners — Age of Prisoners who have experienced Sickness.											
				Under 16 Years.		16 Years and under 18.		18 Years and under 21.		21 Years and under 50.		50 Years and above.		Total.	
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	Aberdeen	Aberdeen	1	...	1	...	1	4	9	31	26	6	3	41	40
		Peterhead	2	...	...	...	...	...	...	...	...	...	...	...	...
		Huntly	3	...	...	...	...	...	...	...	...	...	...	...	...
		Fraserburgh	4	1	...	...	...	...	...	...	...	...	...	1	...
2	Argyle	Inveraray	5	...	...	...	...	...	...	...	...	...	...	...	...
		Campbeltown	6	...	...	...	...	...	...	...	...	...	...	...	...
		Tobermory	7	...	...	...	...	...	...	...	...	...	...	...	...
		Lochgilphead	8	...	...	...	...	...	...	...	...	...	...	...	...
3	Ayr	Ayr	9	...	...	...	1	...	1	1	5	1	...	2	7
		Kilmarnock	10	...	...	...	...	...	...	1	...	...	...	1	...
4	Banff	Banff	11	...	...	...	...	...	...	...	1	..	...	...	1
		Keith	12	...	...	...	...	...	...	...	...	...	...	...	...
		Cullen	13	...	...	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	...	...	...	...	...	..	5	...	...	...	5	...
		Dunse	15	...	...	...	...	...	...	...	...	...	...	...	...
6	Bute	Rothesay	16	...	...	...	...	1	...	3	3	...	...	4	3
7	Caithness	Wick	17	...	...	...	...	...	...	1	...	1	...	2	...
8	Clackmannan	Alloa	18	...	...	...	...	...	...	5	1	...	...	5	1
9	Dumbarton	Dumbarton	19	...	...	...	...	1	...	6	1	1	...	8	1
		Kirkintilloch	20	...	...	...	...	...	...	...	...	...	...	...	...
		Helensburgh	21	...	...	...	...	...	...	...	...	...	...	...	...
10	Dumfries	Dumfries	22	...	...	...	...	2	1	5	1	1	...	8	2
11	Edinburgh	Edinburgh	23	2	...	...	3	8	9	37	71	7	5	54	88
		Musselburgh	24	...	...	...	...	...	...	...	...	...	...	...	...
		Court Buildings	25	...	...	...	...	...	...	...	...	...	...	...	...
12	Elgin	Elgin	26	...	...	...	...	...	...	...	...	...	...	...	...
		Forres	27	...	...	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	...	...	...	...	1	...	3	...	3	1	7	1
		Dunfermline	29	...	...	...	...	...	1	1	...	...	...	1	1
14	Forfar	Dundee	30	2	1	...	1	2	10	24	30	5	3	33	45
		Forfar	31	...	...	...	...	...	...	10	7	...	1	10	8
		Montrose	32	...	...	...	...	...	...	4	3	2	...	6	3
		Arbroath	33	...	...	...	...	1	...	...	2	...	1	1	3
		Brechin	34	...	...	...	...	...	...	...	...	...	...	...	...
15	Haddington	Haddington	35	...	...	...	...	...	...	...	...	...	...	...	...
		Dunbar	36	...	...	...	...	...	...	...	...	...	...	...	...
16	Inverness	Inverness	37	...	...	...	...	...	...	...	...	...	...	...	...
		Portree	38	...	...	...	...	...	...	...	...	...	...	...	...
		Lochmaddy	39	...	...	...	...	...	...	1	1	...	...	1	1
		Fort-William	40	...	...	...	...	...	...	...	...	...	...	...	...
17	Kincardine	Stonehaven	41	...	...	...	...	...	...	...	...	...	...	...	...
18	Kinross	Kinross	42	...	...	...	...	...	...	1	2	...	1	1	3
19	Kirkcudbright	Kirkcudbright	43	1	...	...	...	3	2	13	5	...	2	17	9
		Maxwelltown	44	...	...	...	...	..	...	...	1	...	...	...	1
20	Lanark	Glasgow	45	...	...	2	7	6	9	30	48	8	5	46	69
		Lanark	46	...	...	...	...	...	...	...	...	...	...	...	...
		Hamilton	47	...	...	...	...	...	2	2	5	...	...	2	7
		Airdrie	48	...	...	...	...	...	...	2	8	1	...	3	8
21	Linlithgow	Linlithgow	49	...	...	...	...	...	...	...	...	...	...	...	...
22	Nairn	Nairn	50	...	...	...	...	...	...	1	...	...	1	1	1
23	Orkney	Kirkwall	51	...	...	1	...	...	...	...	...	...	...	1	...
24	Peebles	Peebles	52	1	...	...	...	...	...	2	...	...	...	3	...
25	Perth	Perth	53	2	...	4	1	3	2	41	16	10	2	60	21
		Perth Police Cells	54	...	...	...	...	...	...	...	...	...	...	...	...
		Dunblane	55	...	...	...	...	...	...	...	1	...	...	...	1
26	Renfrew	Paisley	56	...	1	...	1	3	3	19	23	2	2	24	30
		Greenock	57	...	...	...	...	...	...	1	3	1	...	2	3
		Pollockshaws	58	...	...	...	...	...	...	...	...	...	...	...	...
27	Ross and Cromarty	Dingwall	59	...	...	...	...	...	...	...	...	...	...	...	...
		Tain	60	...	...	...	...	...	...	...	...	...	...	...	...
		Cromarty	61	...	...	...	...	...	...	...	...	...	...	...	...
		Stornoway	62	...	...	...	...	...	...	2	...	...	...	2	...
28	Roxburgh	Jedburgh	63	...	...	...	...	...	...	3	...	...	...	3	...
		Hawick	64	...	...	...	...	...	...	2	...	1	...	3	...
		Kelso	65	...	...	...	...	1	...	2	...	1	1	4	1
29	Selkirk	Selkirk	66	...	...	...	...	...	...	3	1	1	...	4	1
30	Stirling	Stirling	67	2	...	...	...	1	...	9	2	1	1	13	3
		Falkirk	68	...	...	...	...	...	...	...	...	...	...	...	...
31	Sutherland	Dornoch	69	...	...	...	...	...	...	...	...	...	...	...	...
32	Wigtown	Wigtown	70	...	...	...	...	...	...	...	...	...	...	...	...
		Stranraer	71	...	..	...	...	...	...	3	1	1	...	4	1
33	Zetland	Fort-Charlotte	72	...	...	...	...	...	...	..	...	...	...	...	...
25	Perth	General Prison	73	1	...	1	4	4	13	27	60	7	6	40	83
				12	3	8	19	41	62	301	328	61	35	433	447
				15		27		103		629		96		870	

for the Year ended on the last day of June 1860—*continued.* (No. V. *Continued.*)

in Confinement during the said Period, as appearing from the Register of Sickness.

Character of Disease, and Time of Appearance.												Number of Prisoners who have been off Work.																No. of Prison
Cases of Dangerous Illness.		Cases of Slight Disorders.		Total.		Appeared before Imprisonment.		Appeared after Imprisonment.		Total.		1 Day.		2 Days.		3 Days.		4 Days.		5 Days and under 10 Days.		10 Days and under 20 Days.		Above 20 Days.		Total.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
2	1	39	39	41	40	34	33	7	7	41	40	3	1	3	2	3	2	...	3	2	6	...	1	1	2	12	17	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
...	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
1	4	1	3	2	7	2	5	1	1	3	6	1	4	...	...	...	...	...	...	1	...	...	2	...	1	2	7	10
...	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	11
...	1	...	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	13
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
...	...	5	...	5	...	5	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
...	...	4	3	4	3	...	2	4	1	4	3	...	1	2	2	1	...	1	...	...	...	...	...	...	...	4	3	17
1	...	1	...	2	...	1	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	5	1	18
1	1	4	...	5	1	4	...	1	1	5	1	1	...	...	...	...	...	...	1	1	...	1	...	1	...	4	1	19
...	...	8	1	8	1	6	...	2	1	8	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	22
...	...	8	2	8	2	4	1	4	1	8	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23
4	7	50	81	54	88	43	64	11	24	54	88	1	...	15	29	16	25	10	14	7	11	3	8	2	1	54	88	24
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	1	1	...	...	5	1	28
...	...	7	1	7	1	5	1	2	...	7	1	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	1	29
...	...	1	1	1	1	1	1	...	...	1	1	...	...	2	9	...	10	3	7	5	4	...	2	...	1	10	33	30
6	7	27	38	33	45	26	28	7	17	33	45	...	...	...	...	4	2	1	1	1	2	2	1	2	2	10	8	31
...	...	10	8	10	8	8	2	2	6	10	8	...	...	...	...	...	1	...	2	1	...	...	...	1	...	3	3	32
...	...	6	3	6	3	4	2	2	1	6	3	...	...	1	...	...	1	...	1	...	1	...	...	...	...	...	3	33
...	...	1	3	1	3	1	2	...	1	1	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	34
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	36
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37
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...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	1	1	39
...	...	1	1	1	1	1	...	...	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	40
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41
...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	42
...	1	1	2	1	3	1	3	...	...	1	3	...	...	...	...	...	...	...	...	...	1	1	2	...	...	1	3	43
...	1	17	8	17	9	16	7	1	2	17	9	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	3	44
...	...	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	45
13	12	33	57	46	69	33	58	13	11	46	69	...	...	10	8	6	4	6	5	8	25	12	13	4	14	46	69	46
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47
...	1	2	6	2	7	2	4	...	3	2	7	...	...	...	...	...	...	...	...	...	2	...	4	2	1	2	7	48
1	2	2	6	3	8	2	6	1	2	3	8	...	...	...	...	...	1	...	...	1	2	...	2	2	3	3	8	49
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	50
1	...	...	1	1	1	...	...	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	1	51
...	...	1	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	52
...	...	3	...	3	...	...	...	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	53
5	1	55	20	60	21	38	17	22	4	60	21	1	...	2	...	3	...	...	...	1	...	1	...	2	1	10	1	54
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	55
...	...	...	1	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	..	...	1	...	...	...	1	56
6	12	18	18	24	30	21	27	3	3	24	30	...	...	1	...	...	...	3	2	6	7	3	3	1	3	14	15	57
1	...	1	3	2	3	2	3	...	...	2	3	...	...	...	...	...	...	...	1	...	1	2	...	...	1	2	3	58
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	61
...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	62
...	...	2	...	2	...	2	...	...	...	2	...	...	...	...	...	...	1	...	...	1	...	1	...	...	...	3	...	63
1	...	2	...	3	...	2	...	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	64
...	...	3	...	3	...	3	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	65
...	...	4	1	4	1	2	1	2	...	4	1	...	...	...	...	...	...	...	...	2	1	...	...	...	...	3	1	66
...	...	4	1	4	1	2	...	2	1	4	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	67
2	1	11	2	13	3	4	2	9	1	13	3	...	..	...	...	...	1	...	...	...	1	2	...	2	1	4	3	68
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	69
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	70
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	2	1	71
...	...	4	1	4	1	1	...	3	1	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	72
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	73
16	48	24	35	40	83	14	45	26	38	40	83	...	1	1	3	...	4	1	4	1	14	5	10	11	34	19	70	74
61	100	362	347	423	447	291	316	133	130	424	446	7	7	39	55	35	50	26	43	45	79	35	54	35	67	222	355	
161		709		870		607		263		870		14		94		85		69		124		89		102		577		

(No. V. *Continued.*) Digest of Returns relative to Prisons and Prisoners in Scotland,

	COUNTIES.	PRISONS.	No. of Prison.	Sickness and Deaths of Criminal Prisoners, &c.—*continued.*									
				Time which Prisoners have been off Work from Illness, including Time which Prisoners not required to Work would have been withdrawn had they been at Work.				Number of Prisoners Removed on Account of Sickness.		Number Liberated on Account of Sickness.		Number of Deaths.	
				Total Number of Days.		Average Number of Days per Prisoner, calculated on the Average Number of Prisoners.							
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1	Aberdeen	Aberdeen	1	68	171	2	5	1	...	...	...	...	...
		Peterhead	2	...	...	...	...	...	...	...	...	...	...
		Huntly	3	...	...	...	...	...	...	...	...	...	...
		Fraserburgh	4	...	...	...	...	...	...	...	...	...	...
2	Argyle	Inveraray	5	...	...	...	...	...	...	...	...	...	...
		Campbeltown	6	...	...	...	...	...	...	...	...	...	...
		Tobermory	7	...	...	...	...	...	...	...	...	...	...
		Lochgilphead	8	...	...	...	...	...	...	...	...	...	...
3	Ayr	Ayr	9	8	49	...	2	...	...	...	1	1	3
		Kilmarnock	10	7	...	...	...	...	...	...	...	...	...
4	Banff	Banff	11	...	17	...	5	...	...	...	...	...	...
		Keith	12	...	...	...	...	...	...	...	...	...	...
		Cullen	13	...	...	...	...	...	...	...	...	...	...
5	Berwick	Greenlaw	14	...	...	...	...	...	...	...	...	...	...
		Dunse	15	...	...	...	...	...	...	...	...	...	...
6	Bute	Rothesay	16	11	5	5	2	...	...	...	...	...	...
7	Caithness	Wick	17	...	...	...	...	...	...	...	...	...	...
8	Clackmannan	Alloa	18	134	20	26	10	...	...	...	...	...	...
9	Dumbarton	Dumbarton	19	64	4	5	1	...	...	...	...	...	...
		Kirkintilloch	20	...	...	...	...	...	...	...	...	...	...
		Helensburgh	21	...	...	...	...	...	...	...	...	...	...
10	Dumfries	Dumfries	22	...	...	...	...	...	...	...	...	...	...
11	Edinburgh	Edinburgh	23	246	393	1	2	...	...	2	...	1	3
		Musselburgh	24	...	...	...	...	...	...	...	...	...	...
		Court Buildings	25	...	...	...	...	...	...	...	...	...	...
12	Elgin	Elgin	26	...	...	...	...	...	...	...	...	...	...
		Forres,	27	...	...	...	...	...	...	...	...	...	...
13	Fife	Cupar	28	41	11	3	2	...	...	...	...	...	...
		Dunfermline	29	10	30	1	30	...	...	...	...	...	...
14	Forfar	Dundee	30	58	148	1	4	...	...	...	...	1	1
		Forfar	31	47	62	4	9	...	...	...	...	...	...
		Montrose	32	28	11	7	5	...	...	...	...	...	...
		Arbroath	33	...	15	...	7	...	...	...	...	...	...
		Brechin	34	...	...	...	...	...	...	...	...	...	...
15	Haddington	Haddington	35	...	...	...	...	...	...	...	...	...	...
		Dunbar	36	...	...	...	...	...	...	...	...	...	...
16	Inverness	Inverness	37	...	...	...	...	...	...	...	...	...	...
		Portree	38	...	...	...	...	...	...	...	...	...	...
		Lochmaddy	39	9	4	...	...	...	...	...	...	...	...
		Fort-William	40	...	...	...	...	...	...	...	...	...	...
17	Kincardine	Stonehaven	41	...	...	...	...	...	...	...	...	...	...
18	Kinross	Kinross	42	10	35	5	35	...	...	...	...	...	...
19	Kirkcudbright	Kirkcudbright	43	...	21	...	...	...	...	...	1	...	1
		Maxwelltown	44	16	...	...	...	...	...	...	...	...	...
20	Lanark	Glasgow	45	353	895	2	4	...	...	2	...	4	2
		Lanark	46	...	...	...	...	...	...	...	...	...	...
		Hamilton	47	245	287	9	32	...	...	...	...	...	...
		Airdrie	48	79	115	3	7	...	...	...	...	...	...
21	Linlithgow	Linlithgow	49	...	...	...	...	...	...	...	...	...	...
22	Nairn	Nairn	50	30	20	15	...	...	...	...	...	...	...
23	Orkney	Kirkwall	51	...	...	...	...	...	...	...	...	...	...
24	Peebles	Peebles	52	...	...	...	...	...	...	...	...	...	...
25	Perth	Perth	53	88	20	3	1	...	...	...	...	...	...
		Perth Police Cells	54	...	...	...	...	...	...	...	...	...	...
		Dunblane	55	...	15	...	...	...	...	...	...	...	...
26	Renfrew	Paisley	56	136	194	3	5	...	...	...	...	...	...
		Greenock	57	30	31	3	3	...	...	...	...	...	...
		Pollockshaws	58	...	...	...	...	...	...	...	...	...	...
27	Ross and Cromarty	Dingwall	59	...	...	...	...	...	...	...	...	...	...
		Tain	60	...	...	...	...	...	...	...	...	...	...
		Cromarty	61	...	...	...	...	...	...	...	...	...	...
		Stornoway	62	...	...	...	...	...	...	...	...	...	...
28	Roxburgh	Jedburgh	63	24	...	2	...	...	...	...	...	...	...
		Hawick	64	...	...	...	...	...	...	...	...	...	...
		Kelso	65	...	...	...	...	...	...	...	...	...	...
29	Selkirk	Selkirk	66	14	7	14	...	...	...	...	...	...	...
30	Stirling	Stirling	67	177	39	4	2	...	...	...	...	...	...
		Falkirk	68	...	...	...	...	...	...	...	...	...	...
31	Sutherland	Dornoch	69	...	...	...	...	...	...	...	...	...	...
32	Wigtown	Wigtown	70	...	...	...	...	...	...	...	...	...	...
		Stranraer	71	14	6	3	3	...	...	...	...	...	...
33	Zetland	Fort-Charlotte	72	...	...	...	...	...	...	...	...	...	...
25	Perth	General Prison	73	493	1,814	2	4	...	2	...	2	1	14
				2,440	4,439	2	4	1	2	4	4	8	24
				6,879		3		3		8		32	

for the Year ended on the last day of June 1860—*continued.*

No. V. (*Continued.*)

Civil Prisoners.

Amount of Debts.														Med. Fug.		Ad fact. præstand.		Other Causes.		Total.		Work.				No. of Prison.
Fines or Forfeitures of £8, 6s. 8d. and under.		Above £8, 6s. 8d. and under £20.		£20 and under £50.		£50 and under £100.		£100 and under £500.		£500 and under £1000.		£1000 and upwards.										Number who have consented to Work.		Number who have not consented to Work.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
11	...	27	...	14	1	2	...	1	...	...	...	...	...	3	...	...	...	...	...	58	1	4	1	54	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	5
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	6
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
...	...	9	...	5	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	18	...	2	...	16	...	9
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
...	...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	5	...	...	...	5	...	11
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
1	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	4	...	14
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
...	...	3	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	6	...	16
1	...	3	...	5	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	11	...	...	...	11	...	17
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	2	...	18
...	...	5	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	...	8	...	19
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21
5	...	7	1	6	...	4	...	1	...	...	...	...	...	...	...	...	...	1	...	24	1	...	...	24	1	22
5	...	26	3	21	...	9	...	1	...	1	...	...	...	...	...	...	...	1	1	64	4	...	...	64	4	23
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
...	...	1	...	10	...	1	1	1	...	...	...	...	...	1	...	...	...	2	...	16	1	...	...	16	1	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27
1	...	4	...	2	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	9	1	...	...	9	1	28
1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	4	...	29
5	...	11	...	10	1	4	...	2	...	...	...	...	...	2	...	...	...	1	...	35	1	4	...	31	1	30
...	...	3	...	5	...	6	...	2	...	...	...	...	...	...	...	...	...	...	...	16	...	...	...	16	...	31
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	33
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	35
1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	36
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	37
1	...	12	...	3	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	18	...	4	...	14	...	38
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	39
...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	40
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41
2	...	4	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	...	...	8	...	42
...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	43
4	...	2	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	9	...	...	...	9	...	44
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	45
...	...	81	3	37	2	12	...	18	...	1	...	1	...	1	1	2	1	20	3	173	10	3	2	170	8	46
3	...	4	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	...	1	...	7	...	47
...	...	5	...	3	...	2	...	2	1	...	...	...	...	2	...	...	...	...	...	14	1	2	1	12	...	48
2	...	2	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	...	...	...	7	...	49
...	...	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	4	...	50
...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	3	...	...	...	3	...	51
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	52
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...	53
...	...	6	...	3	...	3	...	...	...	...	...	...	...	1	...	...	...	2	...	15	...	...	...	15	...	54
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	55
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	56
1	...	8	...	13	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	25	...	...	...	25	...	57
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	58
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59
...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	2	1	60
..	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	3	...	61
...	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	3	...	...	...	3	...	62
1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	3	...	63
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	64
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	65
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	66
...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	67
...	...	7	...	5	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...	...	...	13	...	68
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	69
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	70
2	...	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	1	...	...	5	1	71
...	...	2	...	3	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	6	1	...	...	6	1	72
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	73
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
47	...	251	9	174	6	55	2	34	1	3	...	1	...	17	1	3	1	28	4	613	24	20	5	593	19	
47		260		180		57		35		3		1		18		4		32		637		25		612		

No. VI.—Digest of Returns from the several Prisons in Scotland respecting the enforcement of the

COUNTIES.	PRISONS.	Number of Prisoners in Custody on 30th November 1860.			Number of Prisoners subjected to Rules during 1860.						Number of Crank-Machines fitted up in the Prison.			Number of Guard-Beds fitted up in the Prison.			Opinion of the Whether the operation of Hard Labour, according to the Governor's experience, has been satisfactory or otherwise?
					To Hard Labour.			To Guard-Beds.									
		M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M	F.	T.	
1 Aberdeen,	Aberdeen,	37	18	55	30	4	34	310	244	554	5	1	6	31	21	52	Generally satisfactory.
	Peterhead,	3	...	3	2	...	2	31	6	37	1	...	1	3	3	6	The system appears satisfactory.
	Huntly,	...	...	...	...	...	...	7	5	12	1	...	1	3	...	3	Very satisfactory.
	Fraserburgh,	...	...	...	...	...	...	5	...	5	1	...	1	2	...	2	No opportunity of judging during the year.
2 Argyle,	Inveraray,	5	2	7	...	...	...	38	9	47	1	...	1	3	1	4	No hard labour sentences during the period.
	Campbeltown,	4	3	7	6	...	6	35	22	57	1	...	1	3	1	4	Quite satisfactory.
	Tobermory,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	No experience.
	Lochgilphead,	...	...	...	...	...	...	6	1	7	1	...	1	2	...	2	Satisfactory.
3 Ayr,	Ayr,	28	12	40	26	4	30	144	62	206	4	2	6	32	90	112	Satisfactory.
	Kilmarnock,	10	7	17	3	...	3	84	68	152	2	...	2	10	5	15	Satisfactory.
4. Banff,	Banff,	3	3	6	3	...	3	30	17	47	4	...	4	7	...	7	Satisfactory during the time he has acted interim Governor.
5 Berwick	Greenlaw,	4	1	5	12	1	13	34	16	50	3	1	4	8	2	10	Satisfactory.
	Dunse,	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	No experience.
6 Bute	Rothesay,	5	4	9	...	...	...	28	15	43	1	...	1	3	2	5	Satisfactory.
7 Caithness,	Wick,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....
8 Clackmannan,	Alloa,	8	2	10	8	...	8	44	10	54	2	1	3	7	3	10	Satisfactory.
9 Dumbarton,	Dumbarton,	6	3	9	...	...	...	85	30	115	2	...	2	10	3	13	Satisfactory.
	Kirkintilloch,	...	...	...	...	...	...	35	21	56	...	...	...	2	1	3	No hard labour in this Prison.
	Helensburgh,	...	...	...	...	...	...	20	17	37	...	...	...	1	1	2	No work done in this Prison.
10 Dumfries,	Dumfries,	13	4	17	10	...	10	63	30	93	3	1	4	18	6	24	Satisfactory.
11 Edinburgh,	Edinburgh,	162	179	341	198	295	493	1442	1736	3178	24	7	31	205	196	401	Satisfactory. Thinks stone-breaking might, with advantage, be added to the present two kinds of hard labour.
	Musselburgh,	1	...	1	...	...	...	2	...	2	1	...	1	3	1	4	None sentenced to hard labour during the year.
	Court Buildings,	2	12	14	...	...	...	32	65	97	...	...	...	11	...	11	No hard labour.
12 Elgin,	Elgin,	4	4	8	7	2	9	44	18	62	1	1	2	7	4	11	Has been satisfactory.
13 Fife,	Cupar.	14	4	18	8	...	8	126	43	169	4	1	5	17	10	27	Satisfactory.
	Dunfermline,	4	1	5	3	...	3	44	14	58	2	...	2	8	...	8	Satisfactory.
14 Forfar,	Dundee,	37	37	74	125	196	321	358	371	729	5	3	8	40	40	80	Satisfactory.
	Forfar	7	5	12	9	...	9	34	8	42		...	2	12	3	15	The crank has always been dissatisfactory, as stated by the Surgeon. Teasing oakum satisfactory.
	Montrose,	6	...	6	4	1	5	28	15	43	1	1	2	6	6	12	Not satisfactory.

Rules relating to Hard Labour and Guard-Beds, from 1st January to 30th November 1860.

Governor of each Prison under the following Heads, viz.:—			Opinion of the Surgeon of each Prison under the following Heads, viz.:—		
Whether the use of the Guard-Bed, according to his experience, has been satisfactory or otherwise?	Would it, in his opinion, be expedient to limit the Guard-Bed to sentences not exceeding Three Months, and exempt from it prisoners sentenced to longer periods?	Remarks or Suggestions.	Whether the Surgeon has found any effects prejudicial to Health from Hard Labour?	Whether he has found any effects prejudicial to Health from the use of the Guard-Bed?	Remarks or Suggestions.
As prisoners frequently apply for hammocks, considers their use satisfactory.	Thinks that prisoners sentenced to periods exceeding 60 days should be exempt.	Vagrants, idle and dissipated persons, have a great dislike to hard labour, while those accustomed to hard work while out of Prison prefer it to picking oakum.	Has seen nothing prejudicial to health.	Has seen nothing prejudicial to health.	Persons of idle and dissipated habits complain of and at first feel the effects of hard labour.
Satisfactory.	Query does not apply, 60 days being the maximum sentence.	None.	Observed no prejudicial effects.	Observed no injurious effects.	None.
Very satisfactory.	Thinks rule ought to be continued as at present.	Has found both to work well.	None.	None.	None.
Answers well for short periods.	.....	.....	No opportunity of judging during the present year.	The periods of imprisonment being so short, can offer no opinion.	None.
Prisoners generally lose weight, although healthy.	Yes.	.....	No sentences of hard labour during the period.	Found no bad effects.	.....
Quite satisfactory.	No prisoner should be exempt unless on medical grounds.	Hard labour should be included in every sentence, but always subject to the opinion of the Surgeon.	Has not.	Has not.	The judicious enforcement of hard labour has had a very beneficial effect on health.
.....	.....	.....	.....	.....	.....
Satisfactory.	The use is satisfactory at all times.	None.	No.	No.	None.
Satisfactory.	The present as a punishment is of so effective a character that he should be sorry to see it disturbed.	None.	No.	No.	.....
Very satisfactory.	Would not feel inclined to recommend any alteration.	None.	None.	None.	.....
Satisfactory (with same observation).	Is of opinion that every convicted prisoner should be subjected to the guard-bed for the first month after sentence.	None.	No.	No.	On one or two occasions I have ordered the guard-bed to be discontinued. Thinks there ought to be a discretion vested in the Keeper and Surgeon as to its use.
Satisfactory.	No.	Never saw any prisoner the worse for the guard-bed.	No.	No.	.....
.....	.....	.....	.....	.....	.....
Satisfactory.	No.	.....	None.	No.	.....
.....	.....	.....	.....	.....	.....
Satisfactory.	No.	Suggests that prisoners sentenced to 3 months and upwards should be subjected to the use of the guard-bed during the last month instead of the first as at present.	No.	No.	None.
Satisfactory.	No. Existing rule is better than if altered.	No bad effects from either hard labour or guard-bed.	No hard labour sentence in 1860.	No.	None.
Satisfactory; no complaint from prisoners.	Prison limited only to 10 days.	Prisoners being detained in this Prison only 10 days and no hard labour, the guard-bed is most suitable.	No experience of hard labour in this Prison.	No.	.....
Satisfactory.	Experience limited, 10 days being the maximum sentence.	.....	.....	No bad effects.	.....
Satisfactory, with the modification suggested by the Surgeon.	Thinks it would be well to limit them to short sentences, and to exempt those prisoners who could not obtain bail, and may have been long in Prison previous to trial.	.....	No.	During the winter months has requested the Governor to discontinue their use, as he found the prisoners to suffer from colds, &c.	.....
It is much disliked by the prisoners, and has certainly rendered imprisonment more punitive, but whether it has deterred from crime it is difficult to say. Its use has, on the whole, been satisfactory.	No. As the longer sentence infers the greater criminality, nothing but a regard to the health of the prisoners would justify such an exemption. If prisoners sentenced to 4 months were to be exempted lest it might injure their health, it would be difficult to show that prisoners sentenced to 2 or 3 months ought not to be exempted for the same reason.	.....	No.	No.	No.
It has. The prisoners expressing more anxiety regarding it than any other part of the imprisonment.	Guard-bed should be given generally in cases of short sentences.	.....	No hard labour.	No.	.....
Can form no opinion; tried prisoners confined only from 3 to 10 days.	Not applicable to this Prison.	.....	No.	No.	.....
It has.	I consider it would.	.....	I have found none.	Found none.	.....
Very satisfactory.	No; never found anything detrimental to the prisoner.	Considers crank labour and the guard-bed very useful for a Prison, as they are very much disliked by all the prisoners, without being detrimental to health.	No.	No.	Any prisoner who, on examination, appeared to be unfitted for either, by bodily ailment or advanced years, or who, during their imprisonment became so, were exempted from the one or the other, as the case may have been, according to rules.
Satisfactory.	Expedient.	.....	None whatever.	No.	Considers it would be expedient to limit the use of the guard-bed to sentences not exceeding 3 months, for the sake of the health of the prisoners.
Satisfactory generally.	Convicted prisoners usually much depressed on conviction, and Governor of opinion that the use of the guard-bed, in their case, might be discontinued; besides, at liberation, the period of hardship of the guard-bed will have become too remote to be remembered; for similar reasons it might be expedient to limit its use to sentences not exceeding 3 months, or it might be more equitable to regulate or modify its use as in the matter of hard labour by order of Court on passing sentence.	.....	None.	None.	Concurs in remarks by the Governor.
Satisfactory, except in cases of long sentences.	Considers this a desirable alteration. After long sentence prisoner in desponding state.	Concurs in Surgeon's remarks.	Has not found ordinary hard labour prejudicial; but, in only [one] or two instances found prisoners able to undergo crank-labour without injury to health.	Discontinued its use during the Winter months owing to the extreme coldness of the cells. Considers its use in mild weather a satisfactory mode of punishment for short sentences.	.....
Satisfactory.	Yes; under existing rules.	The prisoners, during Governor's experience, rarely consider the crank punishment. The use of the guard-bed might be extended with advantage, the health and constitution of the prisoners being considered, and the bedding increased in cold weather.	None.	Has had occasionally to order a hammock, but has not seen any prejudicial effects where the prisoners were in perfect health.	.....

No. VI.—Digest of Returns from the several Prisons in Scotland respecting the enforcement of the

COUNTIES.	PRISONS.	Number of Prisoners in Custody on 30th November 1860.			Number of Prisoners subjected to Rules during 1854.						Number of Crank-Machines fitted up in the Prison.			Number of Guard-Beds fitted up in the Prison.			Opinion of the
					To Hard Labour.			To Guard-Beds.									Whether the operation of Hard Labour, according to the Governor's experience, has been satisfactory or otherwise?
		M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	
	Arbroath, ...	...	1	1	22	28	50	28	36	64	1	...	1	8	...	8	Satisfactory.
	Brechin, ...	1	1	2	...	2	2	18	21	39	1	...	1	4	...	4	Satisfactory.
15 Haddington, ...	Haddington, ...	9	3	12	4	...	4	99	44	143	3	...	3	23	...	23	Teasing oakum satisfactory.
16 Inverness, ...	Inverness, ...	8	3	11	2	...	2	75	39	114	2	1	3	8	8	16	Satisfactory.
	Portree, ...	2	...	2	...	...	...	4	3	7	1	...	1	6	...	6	Satisfactory.
	Lochmaddy, ...	3	1	4	...	...	...	2	3	5	1	...	1	4	...	4	Satisfactory.
	Fort-William,	...	..	...	...	...	...	11	4	15	1	...	1	3	2	5	No hard labour during the year.
17 Kincardine, ...	Stonehaven, ...	2	1	3	11	1	12	29	8	37	2	1	3	6	2	8	Satisfactory.
18 Kinross, ...	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....
19 Kirkcudbright, ...	Kirkcudbright,	4	2	6	45	3	48	78	13	91	2	1	3	14	4	18	Satisfactory.
	Maxwelltown,	...	...	...	6	...	6	13	4	17	1	...	1	3	...	3	Satisfactory.
20 Lanark, ...	Glasgow, ...	212	222	434	57	6	63	1750	1507	3257	20	6	26	299	214	513	Very satisfactory.
	Lanark, ...	9	1	10	13	3	16	59	13	72	3	...	3	18	2	20	Satisfactory, but might be modified or dispensed with.
	Hamilton, ...	16	10	26	93	17	110	231	66	297	4	1	5	14	6	20	Satisfactory.
	Airdrie, ...	24	9	33	34	2	36	376	221	597	2	1	3	31	12	43	Has had a salutary effect, and therefore satisfactory.
21 Linlithgow, ...	Linlithgow, ...	2	2	4	5	...	5	75	30	105	3	1	4	6	4	10	Satisfactory.
22 Nairn, ...	Nairn, ...	2	2	4	...	...	...	16	8	24	...	...	...	3	2	5	No hard labour sentences during the year.
23 Orkney, ...	Kirkwall, ...	1	...	1	...	...	...	18	2	20	...	...	...	6	...	6	No hard labour sentences during the year.
24 Peebles, ...	Peebles, ...	3	...	3	1	...	1	24	3	27	2	...	2	11	...	11	Very satisfactory.*
25 Perth, ...	Perth, ...	30	14	44	11	...	11	274	268	542	5	1	6	35	19	54	Satisfactory; but regrets it cannot be turned to profit.
	Dunblane, ...	2	1	3	...	...	...	29	10	39	1	...	1	6	...	6	Perfectly satisfactory.
26 Renfrew, ...	Paisley, ...	46	19	65	35	1	36	439	315	754	6	2	8	66	52	118	See remarks.
	Greenock, ...	12	6	18	...	...	...	151	188	339	3	1	4	19	14	33	No hard labour. The Inspector having suggested that it be stopped, on account of the bad construction of the Prison.
27 Ross & Cromarty,	Dingwall, ...	4	1	5	2	...	2	65	6	71	1	...	1	20	...	20	Satisfactory.
	Cromarty, ...	...	1	1	...	...	...	...	...	...	...	...	...	3	...	3	No hard labour sentences during the year.
	Stornoway, ...	...	...	...	...	...	...	35	5	40	...	...	...	6	...	6	No hard labour sentences.
	Tain, ...	...	...	...	...	...	...	....	...	...	...	...	...	4	1	5	Do.
28 Roxburgh, ...	Jedburgh, ...	12	3	15	20	...	20	106	10	116	2	...	2	16	...	16	Satisfactory.
	Hawick, ...	...	...	...	1	...	1	4	...	4	1	...	1	4	...	4	Has not had experience.
	Kelso, ...	...	...	...	18	3	21	19	3	22	1	...	1	6	...	6	Satisfactory.
29 Selkirk, ...	Selkirk, ...	...	...	...	...	...	...	26	6	32	1	...	1	3	1	4	Satisfactory.
30 Stirling, ...	Stirling, ...	29	12	41	96	21	117	233	110	343	4	2	6	32	19	51	Satisfactory.
31 Sutherland, ...	Dornoch, ...	6	...	6	...	...	...	...	...	...	1	...	1	4	2	6	Satisfactory when carried out by crank only.
32 Wigtown, ...	Wigtown, ...	5	2	7	2	...	2	24	6	30	1	...	1	5	...	5	Satisfactory.
	Stranraer, ...	11	2	13	5	...	5	35	7	42	1	1	2	3	3	6	Satisfactory.
33 Zetland, ...	Fort-Charlotte,	2	...	2	16	7	23	...	...	...	1	...	1	6	...	6	Satisfactory.
25 Perth, ...	General Prison,	215	396	611	39	...	39	182	78	260	16	2	18	46	34	80	Satisfactory.

No Returns have been received from the Prisons of Keith,

Rules relating to Hard Labour and Guard-Beds, from 1st January to 30th November 1860—*continued.*

Governor of each Prison under the following Heads, viz.:—			Opinion of the Surgeon of each Prison under the following Heads, viz.:—		
Whether the use of the Guard-Bed, according to his experience, has been satisfactory or otherwise?	Would it, in his opinion, be expedient to limit the Guard-Bed to sentences not exceeding Three Months, and exempt from it prisoners sentenced to longer periods?	Remarks or Suggestions.	Whether the Surgeon has found any effects prejudicial to Health from Hard Labour?	Whether he has found any effects prejudicial to Health from the use of the Guard-Bed?	Remarks or Suggestions.
Satisfactory.	No experience; 60 days the maximum.	.....	No.	No.	Hard labour and guard-bed regu lated by health and strength prisoner.
Satisfactory.	Has no experience.	... ..	No.	No.	.....
Satisfactory.	.....	In favour of productive labour against the crank.	Not allowed to be so.	No.	.....
Satisfactory.	Rule now in operation highly satisfactory.	Is of opinion that the guard-bed is the most deterring element in the regulations.	No prejudicial effects.	No.	Is of opinion that the use of th guard-bed under present regul tion is satisfactory.
Satisfactory.	Approves of the use of the guard-bed as at present in force.	.....	No.	I approve of the guard-bed.	.....
Satisfactory.	Yes; but no experience.	.....	No.	No.	.....
Very satisfactory.	Considers it would be expedient.	Suggests that prisoners sentenced to periods not exceeding 60 days be sujected to the use of the guard-bed during the whole period.	No sentences to hard labour.	No ill effects has been observed.	.....
Satisfactory.	No.	.....	No.	No. Had occasion to report prisoners as unfit.	.....
.....	.....	.....	.....	.....	.....
Satisfactory.	Sees no reason why it should be limited.	. ....	No.	No bad effects.	.....
Satisfactory.	No.	.....	None.	None.	... ..
Very satisfactory.	Can see no reason for the exemption of guard-bed to prisoners sentenced to longer periods than 3 months, and would not consider it expedient to limit its use to 3 months' sentences only.	.....	Medicial Officer recently appointed. Governor is aware that the opinion of his predecessor, late Dr. Gibson, was in all respects the same as his own.	.....	.....
Satisfactory.	Sees no reason to alter the present rule, except in long sentences to substitute the last for the first month.	Thinks that every prisoner, where practicable, should work at his own trade.	Has found none.	None.	.....
Satisfactory.	Would not be expedient.	.....	None.	Should not be continued for a longer period than 30 days.	.....
Decidedly satisfactory.	.....	Application of hard labour and guard-bed renders imprisonment irksome and severe. Guard-bed a general cause of complaint. I have, however, never known a prisoner's health to suffer from its use.	None.	None.	.....
Satisfactory.	Thinks that prisoners sentenced to upwards of 3 months should be exempt.	.....	None whatever.	None.	.....
Satisfactory.	Experience very limited; cannot hazard an opinion.	Sentences generally for short periods.	His experience does not enable him to say.	No prejudicial effects to health.	None.
Prisoners have a great aversion to the guard-bed, but Keeper considers they have had a beneficial effect.	Yes.	.....	No hard labour sentences.	Found no bad effects.	Is of opinion that the use of th guard-bed ought to be limited 3 months' sentences.
Very satisfactory.	Yes.	.....	No.	No.	The use of the crank causes impr sonment to be felt as a punis ment, while without it, it is ve little considered as such.
Satisfactory, but detrimental to the bedding, the blankets wearing out in less than half the usual time.	Restriction desirable.	.....	No.	No.	.....
Satisfactory.	Query does not apply.	.....	No.	No.	.....
Satisfactory.	It would.	The additional food which prisoners at hard labour receive take from it the penal character intended. Suggests that prisoners so sentenced should receive the same quantity of food as others.	No bad effects.	No bad effects.	The present plan operates we enough when the Governor an Surgeon discriminate proper whether the prisoner is able not.
Knows of no evil effects, but it has not had the effect of repressing crime that I anticipated.	Does not consider that a prisoner in good health would be any the worse of a month of the guard-bed, however long his sentence.	.....	Has seen no bad effects.	Has seen no bad effects.	.....
Satisfactory.	Yes.	.....	No.	No.	.....
Prisoners frequently request the guard-bed instead of a hammock.	60 days the maximum sentence.	.....	No labour done here.	No.	.....
More satisfactory than otherwise.	Query does not apply.	Two cases of Imprisonment with hard labour, but not carried out for want of a crank and oakum.	No hard labour has ever been performed.	Guard-bed has answered well.	Surgeon regrets to see abl bodied men and lads idl having no work to do.
No experience.	.....	.....	No.	Causes catarrh.	.....
Very satisfactory.	Would not be expedient.	.....	No.	No.	.....
Has not had experience.	Has not had experience.	.....	Has not.	Has seen no prejudicial effects.	.....
Satisfactory	10 days the maximum sentence.	.....	No.	No.	.....
Satisfactory.	Yes.	Suggests that the use of the guard-bed should operate during the whole period of imprisonment say the last week of every month, or at longer intervals.	No.	No.	.....
Satisfactory.	Is of opinion that the present system is satisfactory and ought to be continued.	.....	I have not.	I have not.	The Governor and Surgeon havi ample powers to dispense wi the use of the guard-bed and ha labour, no prejudicial effe ought to arise.
Unsatisfactory.	Cannot give an opinion.	The guard-beds are so near the floor that they destroy a great deal of blankets.	No.	The prisoners complain of cold.	Beds ought to be remov farther from the floor.
Satisfactory.	Expedient.	.....	None.	None.	.....
Very satisfactory.	Suggests that all prisoners under 6 months should be subjected to the guard-bed.	.....	No.	No.	Has seen no prejudicial effect fr the Guard-bed, but considers should be used with caution.
Unsatisfactory.	It would be expedient to limit it.	Guard-bed discontinued in Winter owing to the coldness of the cells.	I have not.	Would be prejudicial if used during Winter.	The guard-bed discontinued Winter, a mattress being gran
Satisfactory.	Would not be expedient.	.....	None.	None.	Prisoners labouring under dise and old age are exempt in wh or in part.

Cullen, Forres, Dunbar, Kinross, Perth Police Cells, Falkirk.

No. VII.—Report by the Governor of the General Prison at Perth for the Year 1860.

Sir, *General Prison, Perth, 5th Janaury* 1861.

I have the honour to transmit to you, for the information of the General Board of Prisons, my Annual Report for the year 1860.

I have every reason to be satisfied with the manner in which the Officers of the Prison have conducted themselves during the year—one male and eight female Officers resigned, and no dismissals have occurred within the period.

Several changes have been made in the Staff since my last report. On 1st January a male Scripture Reader was appointed, and the Head Warder was promoted to a Clerkship in the Steward's Department; while the Superintendent of Juvenile, &c., Prisons, was appointed Head Warder—his former office not being filled up, owing to the small number confined in the Juvenile Prison. On 16th February one Warder was added to the Staff, in room of the Baker Warder, whose whole time is taken up in the Bakehouse; and on the same date a person was appointed Labourer in the Prison Store, in consequence of no discipline Officer being now employed there. On the discontinuance of the Juvenile Prison, the services of one day and one night Officer, who had been only temporarily engaged, were dispensed with.

On 4th January 14 cells were transferred from the female accommodation to that of imprisonment males.

The accommodation of the Main Prison at the close of the year was 726, viz., for imprisonment prisoners 246 cells for males and 124 for females, and 356 cells, with four work rooms, for females under sentence to transportation or penal servitude.

Hospitals for the sick of both sexes are in the Main Prison, as also accommodation for female Imbeciles, Epileptics, and Nursing Mothers.

On 29th October, in consequence of the small number of Class Juveniles in custody, the Juvenile Wing was discontinued by the removal of the boys, then four in number, to the Main Prison. A large cell is there set apart for work, while another is fitted up for educational purposes, and they are confined in separate cells during the night. The system of association at work and exercise is carried out, with some slight exceptions, in the same manner as was followed in the Juvenile Prison, and the accommodation there, numbering 58 Dormitories, was struck off on the above date.

The accommodation in the Branch Prisons is as follows:—In Imbecile Prison 14, in Epileptic Prison 12, and in the Lunatic Department 32 for males and 12 for females.

The following Table shows the number received during the year 1860, including the number in custody at the commencement of the year, the number liberated or removed, and the number remaining in custody at the close of the year.

	Prisoners Sentenced				Insane.		Total.
	To Imprisonment.		To Transportation or Penal Servitude.				
	M.	F.	M.	F.	M.	F.	
In custody at close of 1859, . .	253	117	...	333	21	12	736
Received during the year 1860, .	187	81	...	68	1	1	338
	440	198	...	401	22	13	1074
Deduct as transferred, viz.:—							
From Main Prison and Imbecile Ward to Lunatic Department, . . .	4	1	...	1	...	...	...
From Lunatic Department to Imbecile Ward, . .	...	...	...	...	1	...	...
	436	197	...	400	21	13	
Add to the Department to which transferred, . .	1	...	...	...	4	2	
	437	197	...	400	25	15	1074
Removed during the year, viz.:—							
By Liberation on expiration of sentence (including those removed to Local Prisons for liberation, trial, &c.,	244	106	...	57	5	3	415
By Liberation on License, .	...	...	...	25	...	...	25
By Warrant of Justiciary . .	...	...	...	2	...	...	2
By free or conditional Pardon,	2	2	...	1	...	...	5
By death, ...	2	3	...	7	1	3	16
	248	111	...	92	6	6	463
Remaining in custody at close of 1860, ...	189	86	...	308	19	9	611

The average daily number of prisoners in the Main Prison during the year has been 631, viz., 208 males and 107 females under sentence to imprisonment, and 316 females under sentence to transportation or penal servitude. The average number confined in the Branch Prisons, during the same period, has been 5 Imbeciles, 3 Epileptics, and 30 Lunatics—of whom 20 were males, and 10 females. The average number of Juveniles was 6 males.

The total average daily number of prisoners in the whole Prison during the year was 675, viz., 242 males and 433 females.

The daily average duration of exercise throughout the year was 90 minutes to male Juveniles, 101 minutes to female Convicts, and 56 minutes to other adults.

The general conduct of the prisoners has been very good during the year. The number of punishments inflicted was 242, viz., 86 males and 156 females; and the number of prisoners punished was 138, viz., 49 males and 89 females—leaving 413 males and 523 females who were not punished. Of those punished, the general conduct of 11 males and 24 females was good, 22 males and 39 females indifferent, and 16 males and 26 females bad.

Of 251 male and 111 female Imprisonment prisoners liberated during the year, 122 males and 69 females received gratuities for good conduct, in terms of the 89th of the Rules for Prisons.

Eighty-five females under sentence to transportation or penal servitude were liberated by expiration or remission of sentence during the year, and the good conduct money due to them was paid as explained in my last Report, and in conformity with the Regulations of the General Board. In very few cases have the Convicts failed to apply at the periods fixed by the Regulations for the balance of their good conduct money.

The education of the prisoners has been conducted as formerly under the superintendence of the Chaplain, and I believe the Teachers have performed their duties faithfully.

Of 251 males and 196 females liberated during the year, it appears from information received by the Chaplain, Matron, and myself, that 130 males and 31 females obtained employment shortly after liberation, 10 females were sent to Houses of Refuge, and 95 females left this with the view of proceeding to their homes, where they had friends willing to receive them.

On 24th December, a portion of the pipes connected with one of the heating apparatus of Wing I. gave way in consequence of the very severe frost. After several ineffectual attempts to put them in working order, no less than thirteen fractures having occurred in the following four days, it was found necessary to remove the old pipes, and substitute new ones, which work is now being executed. These fractures were all confined to the pipes on the south-east quarter of the Wing, forming the heating medium to upwards of 40 cells. These cells have been vacated in the meantime, as the vacancies in the Prison exceed that number. With the above exception, the heating and ventilating of the Prison has been satisfactory during the year.

The Inspector of Weights and Measures for the county inspected and adjusted the weights and measures in use in the Prison as formerly.

The supplies for the use of the Prison were, as far as practicable, provided by public contract, and articles of any consequence, for which no contract had been entered into, were provided by estimate.

The chief kinds of work carried on in the Prison have been matmaking, shirtmaking, shoemaking, tailoring, weaving, carpentry, and hair, wool, and oakum teasing.

A full supply of work has been obtained for the Prison during the year.

With the exception of prisoners sentenced to Hard Labour, all were employed when practicable at their own trades, and a considerable proportion of them were taught trades in the Prison which might be useful to them in after life.

The following Table shows the different trades at which the prisoners admitted and liberated or removed in 1860 have been employed; the number who were good tradesmen on admission; the number who had a slight knowledge of a trade on admission, and who improved therein; and the number who were and are presently being taught trades in the Prison:—

TRADES.	ADMITTED DURING 1860.								LIBERATED DURING 1860.							
	Had good knowledge of a Trade on Admission		Had slight knowledge on Admission. Improved in the Prison.		Being taught Trades in the Prison.		TOTAL.		Had good knowledge of a Trade on Admission.		Had slight knowledge on Admission. Improved in the Prison.		Were taught Trades in the Prison.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Shoemaking,..	...	...	2	...	10	...	12	...	...	...	3	...	17	...	20	...
Tailoring	3	...	9	...	...	...	12	...	1	...	7	...	10	...	18	...
Weaving, ...	1	...	3	...	11	...	15	..	1	...	2	...	7	...	10	...
Matmaking, ...	...	...	8	...	105	...	113	...	...	...	1	...	98	...	99	...
Carpentry ...	1	...	...	...	...	...	1	...	2	...	...	...	...	...	2	...
Tinsmith	1	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...
Bookbinding...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Baking, ...	1	...	1	...	2	...	4	...	1	...	1	...		...	2	...
Painting, ...	...	...	...	...	...	...	...	...	2	...	...	...		..	2	...
Winding, ...	1	...	...	...	...	...	1	...	1	...	...	..	..	..	3	...
Dressmaking, ...	...	...	...	...	...	1	...	1	...	...	...	...	...	3	...	3
Shirtmaking, ...	25	...	29	...	56	...	110	...	24	...	67	...	101	...	192	
Knitting, ...	...	...	3	...	2	...	5	...	...	...	...	...	2	...	2	
Washing, ...	...	...	...	...	...	...	...	...	...	...	...	6	...	42	...	48
Total,...	8	25	23	32	128	59	159	116	10	24	14	73	134	148	158	245

From the view of the outlay connected with prisoners' labour, and the returns therefrom for the year ended 31st December 1860, appended hereto, it appears that the clear profit during the year from the labour of prisoners was £2217, 15s. 8^{6}d. sterling, or, exclusive of insane, an average of £3, 8s. 9^{3}d. per prisoner.

The classified Table, appended hereto, of the expenditure of the Prison during the year 1860, exclusive of the expenditure on the labour account, shows that the total cost of each prisoner in that year (exclusive of the expense of transmitting prisoners to and from the Prison, which amounted to £621, 3s. 8d.) was £22, 12s. 9^{5}d., and after deducting the profits arising from the labour of prisoners, the nett cost per prisoner was £19, 5s. 0^{11}d.

I have the honour to be, Sir, your most obedient humble Servant,

JA. STUART, *Governor.*

John Hill Burton, Esq.,
&c. &c.
Edinburgh.

VIEW of the OUTLAY connected with the Prisoners' Labour and of the Returns therefrom for the Year ended 31st December 1860.

	£	s.	d.	£	s.	d.
WORK.—DEBTOR.						
I. To value of Stock on hand at 31st December 1859, viz. :—						
1. Undisposed of Goods,	901	10	5^{1}			
2. Material,	364	17	8^{7}			
3. Tools and Implements,	97	1	3^{8}			
				1363	9	6^{2}
II. To Outstanding Accounts for Sales and Work executed at 31st December 1859, brought from last year's account,	...			477	2	10
III. To Outlay this year for Material, Implements, and Carriage of Goods, viz. :—						
Material, &c.,	2931	11	4			
Implements,	133	9	3^{6}			
				3065	0	7^{6}
Sum of Debit,				4905	12	11^{8}
CREDITOR.						
I. By Loss on Outstanding Accounts in 1859 and previous years, viz. :—						
1. Abatements, &c., at Settlement,	1	1	0			
2. Scored off by the General Board,	...					
II. By Goods returned by Purchasers and Employers on Accounts incurred in 1859,	3	1	0			
III. By Receipts by the Governor, viz. :—						
1. Outstanding Accounts of 1859 and previous years,	416	17	7			
2. For Sales and Work executed to Purchasers and Employers during the year 1860,	2892	17	6			
				3309	15	1
IV. By Current Expenses of the General Prison, viz. :—						
1. Value of Material, &c., issued for the use of the Prison,	832	19	8^{11}			
2. For Earnings rated to Prisoners thereon,	718	7	0^{1}			
				1551	6	9
V. By Outstanding Accounts due by Purchasers and Employers, at 31st December 1860, viz. :—						
1. For Sales and Work executed in 1859, and previous years,	56	3	3			
2. For Sales and Work executed in 1860,	624	8	2			
				680	11	5
VI. By Value of Stock on hand at 31st December 1860, viz. :—						
1. Undisposed of Goods,	569	18	5^{2}			
2. Material,	822	9	2^{1}			
3. Implements of Labour,	185	5	9^{10}			
				1577	13	5^{1}
Sum of Credit,	...			7123	8	8^{4}
Balance, being nett available profits this year,				£2217	15	8^{5}

General Prison, Perth, 15th January 1861.

JA. STUART, *Governor.*

TABLE showing, in classified form, the Expenditure of the General Prison at Perth during the year 1860; and the total Cost of each Prisoner in the year; subject, however, to deduction of Profit arising from the Labour of Prisoners.

	Value of Stock on hand at 31st December 1859.	Outlay during the year.	Gross Expenditure during the year.	Deduct Balance of Stock on hand at 31st December 1860.	Deduct also Expenditure connected with Labour, carried to Labour Account.	Nett Expenditure during the year.	Yearly cost per Prisoner, the average number in custody being 675.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Salaries and Wages,	...	5755 8 1	5755 8 1	...	...	5755 8 1	8 10 6^{4}
2. Uniform of Officers,	...	189 14 8^{9}	189 14 8^{9}	...	...	189 14 8^{9}	0 5 7^{6}
3. Prison Diet,	11 15 1^{1}	4723 7 1	4735 2 2^{1}	34 9 0^{5}	...	4700 13 1^{8}	6 19 3^{4}
4. Contingent alimentary charges,	0 14 0^{11}	252 3 1	252 17 1^{11}	1 11 11^{6}	...	251 5 2^{5}	0 7 5^{4}
5. Medicine,	...	121 14 10	121 14 10	...	...	121 14 10	0 3 7^{3}
6. Clothing,	0 10 6	909 15 3^{6}	910 5 9^{6}	0 10 6	...	909 15 3^{6}	1 6 11^{6}
7. Bedding,	0 15 9	427 1 0^{5}	427 16 9^{5}	35 8 6	...	392 8 3^{5}	0 11 7^{6}
8. Lighting Prison,	...	324 0 0	324 0 0	...	...	324 0 0	0 9 7^{2}
9. Lighting Officers' Houses and Outhouses,	...	116 2 8	116 2 8	...	...	116 2 8	0 3 5^{4}
10. Fuel,	98 11 7^{3}	813 6 0	911 17 7^{3}	101 12 8^{1}	...	810 4 11^{1}	1 4 0^{1}
11. Cooking and Washing,	...	320 4 3	320 4 3	0 4 8^{6}	...	319 19 6^{6}	0 9 5^{9}
12. Material for Work and Carriage of Goods,	...	2931 11 4	2931 11 4	...	2931 11 4	...	...
13. Implements of Labour,	...	133 9 3^{6}	133 9 3^{6}	...	133 9 3^{6}	...	..
14. Gratuities to well-conducted Imprisonment Prisoners, and Good-conduct Money to Convicts,	...	325 5 2	325 5 2	...	...	325 5 2	0 9 7^{3}
15. Subsistence to destitute Prisoners on liberation,	...	17 2 0	17 2 0	...	...	17 2 0	0 0 6^{1}
16. Transmission of Prisoners from Local Prisons to the General Prison,	...	407 11 1	399 0 10	...	...	407 11 1	0 11 9^{11}
17. Travelling Expenses of Prisoners from the General Prison to their usual places of residence,	...	213 12 7	213 12 7	...	...	213 12 7	0 6 4
18. Clothing to Prisoners on Liberation,	...	163 12 6	163 12 6	...	...	163 12 6	0 4 10^{2}
19. Furniture, Fittings, and Untensils,	0 15 7	243 18 0^{2}	244 13 7^{3}	0 14 10	...	243 18 9^{2}	0 7 2^{9}
20. Prison Services not otherwise classified,	...	171 11 8	171 11 8	...	...	171 11 8	0 5 1
21. General Contingent Charges,	...	401 5 9^{8}	401 5 9^{8}	...	...	401 5 9^{8}	0 11 10^{8}
TOTALS,	113 2 7^{3}	18961 16 6	19066 8 10^{3}	174 12 2^{6}	3065 0 7^{6}	15835 6 3^{2}	23 8 10^{9}
Not included in the above—							
1. Convict Earnings,	...	709 11 2	...	...	...	...	...
2. Ordinary Works and Repairs,	...	1776 10 3	...	...	...	...	...
3. Feu-duty,	...	125 0 0	...	...	...	...	...
4. Rent, &c., for Chaplain's and Officers' Houses,	...	63 0 0	...	...	...	...	...
	...	21635 17 11	...	...	...	...	...

General Prison, Perth, 15th January 1861. JA. STUART, *Gov.*

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2. STATEMENT of the Average Daily Number of Criminal Prisoners, and of their Average Cost per Head, not including special expense of transmitting Prisoners to and from Prison, amounting to 18s. 4^{10}d. and Average Earnings in the General Prison at Perth, in the Year ended 31st December 1860:—

PRISON.	In the year ending 31st December 1860.																	
	Average Daily Number in Custody, entered to the nearest unit.	Average Yearly Cost per Head for											Gross Cost per head, including all Expenses.			Average Earnings per Head, available for the Prison.			Nett Cost per Head, after deducting Earnings.		
		Salaries and Wages.			Prison Diet.			Clothing.			Bedding.			Lighting.			Fuel.								
		£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
General Prison,	675	8	16	1^{10}	6	19	3^{4}	1	6	11^{8}	0	11	7^{6}	0	13	0^{6}	1	4	0^{1}	22	10	9^{8}	3	5	8^{6}	19	5	0^{11}

(Signed) JA. STUART, *Governor.*

No. VIII.

Report by the Rev. William Brown, Chaplain of the General Prison at Perth, for the Year 1860.

General Prison, Perth, 5th January 1861.

Sir,—In submitting through you, to the Managers of the General Prison, this my Sixteenth Annual Report—being for the year ended the 31st of December 1860—I beg humbly to state that I have, as from the date of my entrance upon office, cheerfully obeyed the instructions issued for my guidance, and faithfully given "the whole of my time and attention to the Prison."

The following Table will show the total number of Prisoners—Male and Female, Adult and Juvenile, with their average ages, also the age of the oldest and youngest—who have been admitted and re-admitted into the General Prison, since it was opened on the 30th of March 1842 :—

ADMISSIONS.

Period.		Males.	Females.	Total.	Average Age of			Age of Oldest		Age of Youngest	
					Males.	Females.	Total.	Male.	Female.	Male.	Female.
1842-58,*	Adult,	3,491	1,284	4,775	28.5	28.0	28.3	79	76	...	..
	Juvenile,	1,374	76	1,450	14.7	13.9	14.7	...	...	8	10
	Total,	4,865	1,360	6,225	24.6	27.2	25.2	79	76	8	10
In 1859,	Adult,	191	268	459	31.3	31.3	31.3	74	70	...	...
	Juvenile,	48	4	52	15.0	13.7	14.9	...	...	10	11
	Total,	239	272	511	28.0	31.0	29.6	74	70	10	11
In 1860,	Adult,	160	150	310	30.9	28.9	29.9	79	63	...	...
	Juvenile,	28	...	28	15.5	...	15.5	...	...	13	...
	Total,	188	150	338	28.6	28.9	28.7	79	63	13	...
	Grand Total,	5,292	1,782	7,074	24.9	27.9	25.6	79	76	8	10

RE-ADMISSIONS.

1843-58,*	Adult,	312	73	385	28.3	29.8	28.6	77	74	...	...
	Juvenile,	69	3	72	14.7	14.6	14.7	...	...	10	14
	Total,	381	76	457	25.9	29.2	26.4	77	74	10	14
In 1859,	Adult,	28	64	92	36.3	30.9	32.5	65	64	...	...
	Juvenile,	7	1	8	14.7	15.0	14.7	...	...	12	15
	Total,	35	65	100	31.9	30.7	31.1	65	64	12	15
In 1860,	Adult,	31	44	75	33.5	34.2	33.9	79	63	...	...
	Juvenile,	3	...	3	15.0	...	15.0	...	...	14	...
	Total,	34	44	78	31.9	34.2	33.2	79	63	14	...
	Grand Total,	450	185	635	26.8	30.9	28.0	79	74	10	14

Note.—Juveniles : Males under 18, and Females under 16 years.—(Rule 69.)

In relation to the preceding Table, the classes of prisoners received, during the period 1842-58, in the years 1859 and 1860 respectively, and in the aggregate, are indicated as follows :—

Period,	1842-58.*		1859.		1860.		1842-60.	
Sexes,	M.	F.	M.	F.	M.	F.	M.	F.
Sentenced to— Imprisonment :								
Adults,	2,825	978	187	96	159	81	3,171	1,155
Juveniles,	1,362	71	48	3	28	...	1,438	74
Total,	4,187	1,049	235	99	187	81	4,609	1,229
Transportation :								
Adults,	449	34	...	3	...	...	449	37
Juveniles,	8	...	...	...	...	...	8	...
Total,	457	34	...	3	...	...	457	37
Penal Servitude :								
Adults,	164	249	...	165	...	68	164	482
Juveniles,	...	5	...	1	...	...	...	6
Total,	164	254	...	166	...	68	164	488
Lunatic Criminals :								
Adults,	53	23	4	4	1	1	58	28
Juveniles,	4	...	...	...	...	...	4	...
Total,	57	23	4	4	1	1	62	28
Grand Total.....	4,865	1,360	239	272	188	150	5,292	1,782
	6,225		511		338		7,074	

* Detailed in Chaplain's Report for the year 1853, appended (No. VII., p. 51) to the Twentieth Report of the General Board of Directors of Prisons in Scotland.

The number of Re-committals (635) is, in contrast with the amount of Liberations (6463), since the opening of the Prison, at the rate of 9.82 per cent.

The prisoners re-admitted in 1860, in all 78—viz., 34 males and 44 females—left the General Prison as undernoted :—

Year, ...	1848.		1852.		1853.		1854.		1855.		1856.		1857.		1858.		1859.		1860.		Total.	
Sexes, ...	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Number, ...	1	...	1	...	1	...	1	...	5	...	3	1	...	2	5	6	12	22	5	13	34	44
Total, ...	1		1		1		1		5		4		2		11		34		18		78	

The number of Prisoners in custody at the close of the year 1860, was 611,—208 males and 403 females. Of these, 150 had been in the General Prison before—23 males and 110 females once, 7 males and 8 females twice, and 1 male and 1 female four times. The whole were distributed as follows :—

	In Custody.						Re-Admissions.					
	Males.		Females.		Total.		Males.		Females.		Total.	
	Ad.	Juv.	Ad.	Juv.	Ad.	Juv.	Ad.	Juv.	Ad.	Juv.	Ad.	Juv.
In the Main Prison—												
Sentenced to Imprisonment (*a*)	157	25	86	...	243	25	27	3	10	...	37	3
Sentenced to Transportation (*b*)	...	...	25	...	25	...	...	...	3	...	3	...
Sentenced to Penal Servitude (*c*)	...	...	281	2	281	2	...	...	104	2	104	2
In the Juvenile Wing—												
Class-boys (*a*)	...	...	...	...	...	...	...	...	...	...	...	...
Imbecile Ward (*a*).....	3	2	...	...	3	2	...	...	...	...	...	...
Epileptic Ward (*a, d*).....	2	...	...	...	2	...	1	...	...	...	1	...
In the Hospital for Criminal Lunatics (*e*)	18	1	9	...	27	1	...	...	...	...	...	...
Total,.....	180	28	401	2	581	30	28	3	117	2	145	5
	208		403		611		31		119		150	

References :
(*a*) Males from 9 months, and females from 12 months, to periods not exceeding two years.
(*b*) Females from 15 to 21 years ; 4 for life.
(*c*) Females from 3 to 21 years ; 2 for life.
(*d*) Males, including 1 prisoner nurse.
(*e*) Including 1 Male and 3 Females, transferred from the Prison Proper,—Insanity having supervened since their admission.

The following Table will show how often the Prisoners in custody at the close of the year, so far as I have been able to ascertain, had formerly been in confinement, in Local and other Prisons; also, how often the re-admitted Prisoners had been in the General Prison before :—

In the General Prison before.		NUMBER OF TIMES IN PRISONS BEFORE.																									Total.			
		0	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	23	25	28	44	46	51	59	61	64	Males.		Females.	
																											Ad.	Juv.	Ad.	Juv.
Never 461	Male Adults	73	23	18	7	10	7	4	3	1	1	1	1	...	1	2	...	...	...	...	...	...	...	...	...	...	152	...	...	...
	Juveniles ...	5	4	2	4	4	1	1	...	1	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	25	...	...
	Female Adults ...	46	25	15	44	40	34	18	14	9	7	9	3	2	3	3	3	2	1	1	1	1	1	1	...	1	...	...	284	...
	Juveniles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Once 133	Male Adults	...	2	6	1	6	2	1	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	21	...	...	...
	Juveniles ...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
	Female Adults ...	...	4	13	14	23	20	6	10	5	4	2	2	2	1	1	...	...	...	...	...	...	...	1	...	...	...	...	108	...
	Juveniles	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Twice 17	Male Adults	...	...	1	...	3	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	7	...	...	...
	Juveniles ...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
	Female Adults ...	...	...	...	2	1	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...
	Juveniles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total,.....	124	58	55	75	88	64	37	27	16	14	16	6	6	5	6	3	3	1	1	1	1	1	1	1	1	180	28	401	2
																											208		403	

Note.—One of the Male and one of the Female adults,—here for the fifth time.

Additional information, as regards the Juveniles, is submitted in tabular form thus :—

MALES.		FEMALES.		TOTAL.		DOMESTIC CONDITION.
Cared for.	Neglected.	Cared for.	Neglected.	Cared for.	Neglected.	
4	5	...	...	4	5	Have Father and Mother.
1	3	...	1	1	4	„ Father only.
...	3	...	1	...	4	„ Father and Stepmother.
3	6	...	...	3	6	„ Mother only.
2	1	...	...	2	1	„ Mother and Stepfather.
...	...	...	...	...	...	Are Orphans.
10	18	...	2	10	20	
28		2		30		

The following Table will give a comparative view of the state as to Education, on Admission, and on the 31st December, of 501 Prisoners—166 males and 365 females—who have been here for three months and upwards :—

		Could not read at all.		Could read with difficulty.		Could read well, that is, could read any common book easily.		Could not write at all.		Could sign their name merely.		Could write with difficulty.		Could write well.		Improved in Arithmetic.		Improved in other branches of Education.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	M.	F.
51 Males and 26 Females have received instruction for three months, but for less than six months, ...	On admission,	2	6	21	8	28	12	10	13	3	...	20	12	18	1	17	2	...	...
	On 31st December,	...	3	11	6	40	17	1	7	3	1	14	10	33	8	32	1	1	...
71 Males and 78 Females have received instruction for six months, but for less than one year, ...	On admission,	6	16	28	23	37	39	12	28	5	6	35	42	19	2	24	1	...	...
	On 31st December,	...	5	13	20	58	53	...	8	1	2	19	29	51	39	54	24	2	...
44 Males and 261 Females have received instruction for one year and upwards, ...	On admission,	9	41	17	123	18	97	14	100	3	10	21	144	6	7	10	8	...	...
	On 31st December,	5	12	6	49	33	200	6	31	...	13	8	111	30	106	26	75	...	...

The utmost regard is had to the interests of the Prisoners in an educational point of view,—twelve teachers (including one nearly *ab agendo*, but most faithful and efficient in time of service) being judiciously allocated for their instruction. The liberal provision for them in this respect is, on their part, with few exceptions, readily taken advantage of and gratefully acknowledged. From quarterly examinations of their acquirements individually, in the presence of their respective teachers, and not unfrequently in my daily rounds, I am free to state that, as notified in the preceding Table, their educational progress is very satisfactory, commensurate indeed with the means of improvement at their command. The progress, however, is not so marked in regard to the Associated, as to the solitary prisoners in the Female Department.

In consideration of the momentous fact that the subjects of our care are,—like ourselves, their guardians, yea, as mankind in general,—sinners in the sight of God, in heart deceitful, desperately wicked—ever prone to do evil, to speak unadvisedly with their lips, to think not of Him who scans all their ways,—some doubting nothing but truth, others believing everything but Scripture,—the mass worshipping the creature rather than the Creator,—all indeed naturally steeping their senses in forgetfulness, asleep, yea, dead while they live, as to the great eventualities of their existence ;—seeing that our inmates have, in the mysterious dealings of Providence, been found out as to *their* delinquencies, and become amenable most righteously to the majesty of the law, it is *our* province, our duty indeed, according to the grace given us, to tell them, in their humiliating position, that they have done wrong ; to speak to them simply and faithfully—without reference to the sectionalities of Christianity—as to the error of their ways ; to remind them that, though the victims of parental or other neglect, even of their own indiscretion and imprudence, they are not beyond the pale of mercy,—that their waywardness may yet be overlooked, yea, can be rectified, and their misdeeds forgiven—*if they will*—by appeal, by personal application, to their heavenly Advocate,—the Counsel to be had and retained, without money and without price—" the only Mediator between God and man." In this way, in the use of the ordinary means of grace, the reading and the preaching of the Word, we do what we can to compass the grand end in view,—in directing the sinner to the sinner's Friend. In the good work we are well assisted by three Scripture Readers, one in the male and two in the female department ; by several of the teachers also, whose kind offices in this respect are not lost sight of. Much is done, too, towards the promulgation of the Truth in an incidental as well as in a more direct way.

In our experience we find no word so telling on the hard and hardened heart as the Word of God, when uttered in the belief that " where the Spirit of the Lord is there is liberty ;" and we are not without hope that our humble services in the cause of the Gospel—combined with those of our

associates, who have "the one thing needful" at heart—will not be altogether unavailing. The results we leave with Him, to whom we are responsible for our every action, our every word, our every thought.

The Male Juveniles' Association Class, established on 30th November 1847, amounted on the 31st ultimo to 4; the average daily number, during the past year, was 7.07, the greatest number 12, and the least 3. A modification of the regime as to *their* training came into operation on the 29th of October last. The change is in no way inconvenient. I have been in use to give not less than a quarter of an hour on each of three days in the week to visitation in the school-room,—mindful of the private interviews (Rules 46 and 47) with this not the least interesting portion of our inmates. To Mr. Anderson, their late superintendent (now head-warder of the Prison), and to Mr. Duncan, their moral instructor (again connected with the Prison Proper), I feel indebted for the tact displayed by them in the discharge of their respective callings, and for their readiness to help me, on all necessary occasions, in carrying out the instructions of the General Board.

The Sick, also delinquents in close confinement for violation of Prison Rules, we give special attention to in our daily rounds.

During the year, we have met with only one instance of insubordination affecting ourselves, in the person of c/n 308/17, a lad of 18, who was eventually transferred from the Main Prison to the Imbecile Ward.

The Library, being well supplied with books and periodicals, religious and secular, affords a vast amount of interesting and important information to the prisoners.

During the past year, the number of prisoners discharged was 463, viz., 254 males and 209 females, including 3 males and 13 females by death.

The following Table will give a comparative view of their educational state, as on admission, and at departure, with their ages and sentences:—

MALE DEPARTMENT.—On Admission (A.) and at Departure (D.)

	AGES ON COMMITTAL.														SENTENCES.							
	Juveniles.*		18 years and under 20.		20 Years and under 25.		25 Years and under 30.		30 Years and under 40.		40 Years and upwards.		Total.		12 Months and under.		18 Months and above 12.		Above 18 Months.		Total.	
	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
Could not read,	4	...	2	..	3	...	4	3	5	1	7	3	25	7	19	4	5	2	1	1	25	7
Could read a little,	29	7	18	2	19	10	16	3	22	5	13	6	117	33	72	24	43	8	2	1	117	33
Could read well,	14	40	10	28	16	28	19	33	26	47	27	38	112	214	66	129	40	78	6	7	112	214
Total,	47	47	30	30	38	38	39	39	53	53	47	47	254	254	157	157	88	88	9	9	254	254
Could not write,	12	...	7	...	5	...	6	3	8	2	12	3	50	8	37	4	11	2	2	2	50	8
Could sign name merely,	4	...	2	...	6	...	...	...	7	...	1	3	20	3	14	3	6	...	...	...	20	3
Could write a little,	29	26	18	4	16	12	24	8	21	12	18	8	126	70	74	51	50	19	2	...	126	70
Could write well,	2	21	3	26	11	26	9	28	17	39	16	33	58	173	32	99	21	67	5	7	58	173
Total,	47	47	30	30	38	38	39	39	53	53	47	47	254	254	157	157	88	88	9	9	254	254
Could not cipher,	36	5	24	...	25	4	27	6	33	10	30	15	175	40	114	26	57	12	4	2	175	40
Could cipher a little,	10	31	5	14	12	17	5	14	13	18	11	14	56	108	32	77	22	30	2	1	56	108
Could cipher well,†	1	11	1	16	1	17	7	19	7	25	6	18	23	106	11	54	9	46	3	6	23	106
Total,	47	47	30	30	38	38	39	39	53	53	47	47	254	254	157	157	88	88	9	9	254	254

FEMALE DEPARTMENT.—On Admission (A.) and at Departure (D.)

	AGES ON COMMITTAL.														SENTENCES.							
	Juveniles.*		16 Years and under 20.		20 Years and under 25.		25 Years and under 30.		30 Years and under 40.		40 Years and upwards.		Total.		12 Months and under.		18 Months and above 12.		Above 18 Months.		Total.	
	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
Could not read,	3	...	11	...	11	2	8	2	4	...	3	2	40	6	11	1	10	1	19	4	40	6
Could read a little,	...	3	22	10	14	10	12	7	19	7	20	5	87	42	32	17	18	10	37	15	87	42
Could read well,	...	...	18	41	22	35	12	23	15	31	15	31	82	161	19	44	23	40	40	77	82	161
Total,	3	3	51	51	47	47	32	32	38	38	38	38	209	209	62	62	51	51	96	96	209	209
Could not write,	3	...	15	...	21	4	18	3	19	1	18	11	94	19	39	6	19	4	36	9	94	19
Could sign name merely,	...	...	4	1	2	...	1	2	2	3	1	2	10	8	4	6	2	...	4	2	10	8
Could write a little,	...	3	30	25	20	17	12	13	15	15	18	9	95	80	16	28	28	16	51	36	95	80
Could write well,	...	...	2	27	4	26	1	14	2	19	1	16	10	102	3	22	2	31	5	49	10	102
Total,	3	3	51	51	47	47	32	32½	38	38	38	38	209	209	62	62	51	51	96	96	209	209
Could not cipher,	3	3	50	24	44	23	31	24	37	26	38	35	203	135	59	50	49	25	95	60	203	135
Could cipher a little,	...	...	1	24	3	19	1	6	1	11	...	2	6	62	3	8	2	24	1	30	6	62
Could cipher well,†	..	...	...	3	.	5	...	2	...	1	...	1	...	12	...	4	...	2	...	6	...	12
Total,	3	3	51	51	47	47	32	32	38	38	38	38	209	209	62	62	51	51	96	96	209	209

* Males under 18, and Females under 16 years.—(Rule 69.)

† In simple proportion, or the higher rules of arithmetic.

Of these—

Males.	Females.	
7	6	Did not learn to read.
18	34	Learned to read.
228	169	Improved in reading.
253	209	
8	19	Did not learn to write.
3	8	Learned to sign name merely.
60	77	Learned to write.
182	105	Improved in writing.
253	209	
40	135	Did not learn to cipher.
135	69	Learned to cipher.
78	5	Improved in ciphering.
253	209	

One of the males was well-educated on admission.

Of the 251 discharged male prisoners (exclusive of the 3 by death), 105 are entered in my Register as expected to do well, and 130 as having got work. Of those released prior to 1860, I also ascertained that 23 had, in addition to the number already reported on, obtained employment. Of the 196 liberated females (exclusive of the 13 who died), 27 are considered by the Matron hopeful as to their future career; 31 got work; and 10 were sent to Houses of Refuge.

My periodical visits, as far as practicable, to outgone prisoners and their friends are taken kindly, and are, I have reason to believe, attended with beneficial results. As regards my correspondence, many of the letters I receive are characterized by expressions of good-feeling and gratitude, in consideration of the interest manifested for their welfare while in confinement.

I have the honour to remain, Sir, your most obedient Servant,

WILLIAM BROWN, *Chaplain.*

To John Hill Burton, Esquire,
&c. &c. &c.

No. IX.—TABLE exhibiting a Comparative view of the Cost per Prisoner in the General Prison at Perth, in the years ended 31st December 1854, 1855, 1856, 1857, 1858, 1859, and 1860, respectively, not including the Expense of Transmitting Prisoners to and from the Prison, which amounted in 1854 to £0, 16s. 0^{10}d.; in 1855 to £1, 4s. 4^{3}d.; in 1856 to £1, 1s. 3^{6}d.; in 1857 to £0, 19s. 5^{10}d.; in 1858 to £1, 7s. 4^{7}d.; in 1859 to £1, 3s. 6^{11}d.; and in 1860 to 18s. 4^{10}d.

	In 1854, during which the average number of prisoners in custody was 580.			In 1855, during which the average number of prisoners in custody was 498.			In 1856, during which the average number of prisoners in custody was 583.			In 1857, during which the average number of prisoners in custody was 593.			In 1858, during which the average number of prisoners in custody was 561.			In 1859, during which the average number of prisoners in custody was 632.			In 1860, during which the average number of prisoners in custody was 675.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s	d.	£	s.	d.	£	s.	d.
Salaries, wages, and uniform of officers	6	10	3^{11}	7	17	0^{2}	7	4	9^{6}	7	7	0^{6}	8	3	1^{1}	8	3	4^{8}	8	16	1^{10}
Diet	5	16	10^{1}	5	19	9	6	9	3^{5}	6	11	6^{10}	6	5	0^{1}	6	0	10^{10}	6	19	3^{4}
Contingent alimentary charges	0	8	2	0	10	5^{9}	0	8	5^{10}	0	7	0^{1}	0	8	3^{4}	0	7	7^{1}	0	7	5^{4}
Medicine	0	2	8^{11}	0	3	5^{4}	0	2	7^{9}	0	2	6^{5}	0	3	7	0	3	0^{3}	0	3	7^{3}
Clothing	1	8	0^{7}	1	18	0^{2}	1	0	7^{4}	1	2	5^{10}	1	5	1^{7}	2	1	2^{4}	1	6	11^{6}
Bedding	0	2	0^{2}	0	3	7^{1}	0	3	10^{5}	0	5	7^{11}	0	5	8	0	16	8^{10}	0	11	7^{6}
Lighting Prison	0	5	4^{4}	0	8	2^{7}	0	7	2^{9}	0	6	8^{10}	0	7	9^{2}	0	8	5^{4}	0	9	7^{2}
Lighting officers' houses and outhouses	0	2	0^{10}	0	3	1^{9}	0	2	8^{3}	0	2	5^{10}	0	2	11^{7}	0	3	3^{11}	0	3	5^{4}
Fuel	0	19	7	1	2	4^{7}	0	19	10^{7}	0	19	0^{11}	1	0	8^{5}	1	2	11	1	4	0^{1}
Cooking and washing	0	5	4^{7}	0	6	2^{8}	0	7	3	0	7	9	0	8	4^{9}	0	7	10^{10}	0	9	5^{9}
Furniture, fittings, &c.	0	6	9	1	1	11^{1}	0	6	4^{6}	0	9	7^{8}	0	9	0	1	5	0	0	7	2^{9}
General contingent charges	0	19	10^{9}	1	3	3^{5}	1	1	1^{6}	1	0	7^{7}	1	7	6	1	5	4^{11}	1	11	11^{7}
Gross cost per prisoner	17	7	2^{10}	20	17	5^{7}	18	14	2^{10}	19	2	7^{9}	20	7	1^{5}	22	5	9^{11}	22	10	9^{5}
Deduct Earnings per prisoner available for Prison	2	8	0^{11}	2	8	0^{8}	2	13	0^{6}	2	11	0	2	14	1^{10}	2	17	8^{3}	3	5	8
Nett cost per prisoner	14	19	1^{11}	18	9	4^{11}	16	1	2	16	11	7^{9}	17	12	11^{7}	19	8	1^{8}	19	5	0^{11}

No. X.

Report by J. B. Thomson, Resident Surgeon to the General Prison at Perth, for the year ending 31st December 1860.

General Prison, Perth, 5th January 1861.

Sir,—I have the honour of submitting to you, for the information of the General Board of Prisons, the Annual Medical Report for the year 1860, as to the condition, bodily and mental, of the prisoners in the General Prison for Scotland; and, as formerly, I shall arrange my information under the following heads:—

I. Of the General Health, Sickness, and Deaths of Prisoners.
II. Of the Mental Condition of Prisoners not in the Lunatic Department.
III. Of the Department for Criminal Lunatics.
IV. Of the Juvenile Department.

General Health.

I. The general health and physical condition of the prisoners has been very good throughout the year.

Chief kinds of Diseases.

The chief kinds of illness have been as usual of a chronic character, and the causes are very often to be traced to bad constitutions, depraved by hereditary taints, and deteriorated by vicious habits of life, frequently aggravated by repeated imprisonments and misconduct in Prison.

Causes of Diseases.

Occasional colds have taken place from severe and changeable weather, but only one case of epidemic disease worthy of notice. I refer to J. T., C/n 140/19, admitted on the 25th May 1860, and attacked with chicken-pox on the 20th November 1860. Every precaution was taken by placing the patient in isolation, with a hired nurse, by fumigation and otherwise, to prevent infection or contagion. The patient did well, and no other case ensued. It is singular enough, that while small-pox, during the whole of 1860, has prevailed in the city of Perth, and been frequent and fatal, not a single instance of it has appeared within the walls of this Prison.

Epidemics.

Ventilation, &c.

The ventilation, sanitation, dietary, and other hygienic regimen, for the maintenance of the general health of prisoners, are in a satisfactory state. The severity of the weather rendered it necessary, upon the 27th of December, to order *pro tempore* extra bed-clothes and flannel for all imprisonment prisoners who were not already provided with them, and the gas was left lighted in the cells in order to raise the temperature. Notwithstanding the difficulty of heating the cells, the prisoners have made few complaints, and none have materially suffered from the extremely cold weather.

Temperature.

The number and class of prisoners who have been put on the Register of Sickness during the year, were as under, viz.:—

	Sentenced to Imprisonment.		Convicts	Total.
	M.	F.	F.	
On Register at commencement of 1860,	4	1	9	14
Put on during the year, . . .	20	22	70	112
Total during the year, . . .	24	23	79	126
Of whom removed, ...	21	23	72	116
Leaving at 31st December 1860, .	3	...	7	10

The above includes those who were worn-out by gradual decay, yet showing no special disease; also several prisoners repeatedly placed on the Sick Register and child-bed cases.

Slightly or seriously ill.

Slightly ill, . . 68.
Seriously ill, . . 58.

Contracted before or after Admission.

Contracted before admission 55, and after admission 71.

Child-bed Cases.

The number of child-bed cases was 4; of whom 3 were imprisonment prisoners, and 1 a convict.

The number and class of prisoners who have died were as follow:—

Deaths in 1860.

	Sentenced to Imprisonment.		Convicts.	Insane.		Total.
	M.	F.	F.	M.	F.	
Deaths in 1860,	2	3	7	1	3	16

The causes of death were :—

Causes of Deaths.

Phthisis,	3	Diarrhœa,	2
Menorrhagia,	2	General Paralysis,	1
Hæmoptysis,	1	Brain Disease,	1
Scrofula,	1	Inflammation of Windpipe,	1
Hydrothorax,	1	Cancer of Stomach,	1
Heart Disease,	1	Worn-out by gradual decay,	1

The probable predisposing causes of these fatal diseases were :—

Predisposing causes to the Fatal Diseases.

Hereditary taints,	4
Dissipation and worn-out systems,	4
Brain Disease and Insanity,	3
Suicidal, and cut throat before admission,	1
Unknown,	4

Ill before or after.

The diseases contracted before admission,	7
Do. do. after admission,	9

Liberated on Medical grounds.

In the course of the year there were liberated on medical grounds, 2 convict females, who suffered from organic disease of the uterus. One imprisonment male received a free pardon from Her Majesty,—medical certificates having shown that his mental weakness, which supervened in the Main Prison, might be alleviated by the patient's restoration to his family and friends. The number of deaths in 1860 has been above the average. To this number the Lunatic Department has contributed 4, of whom 3 died from diseases peculiar to the insane class, who are certainly more liable than others to organic diseases of the nervous system, and 3 of the deaths were female convicts received in 1859 from the Prison of Ayr. To illustrate the condition of our female convicts, I give the following figures applicable to all in custody in the General Prison, under sentences of transportation and penal servitude, as at 31st December 1855. These numbered 137, and have been disposed of thus:—

Of the Deaths above the average.

Of the Death of Convicts from Ayr.

Disposal of Convicts of 1855.

No. of Convicts in General Prison at 31st December 1855.	Liberated by Expiry of Sentence, Remission, or otherwise.	Liberated on Medical grounds.	Still in Prison.	In Hospital.	Died.	Totals.
Sentenced to 4 years' pen. serv.,	89	4	...	...	5	98
„ 5 „	8	...	...	...	...	8
„ 6 „	2	1	7	...	...	10
„ 14 „	6	...	...	1*	1	8
„ 15 „	...	...	7	2	...	9
„ 21 „	...	...	1	...	...	1
„ Life	...	...	2	...	1	3
	105	5	17	3	7	137

* This prisoner, 346/14, J. M'K., is in the Lunatic Department. The 17 are in an average condition of health. Of those liberated 4 were weak-minded persons, and 5 had threatened or attempted suicide.

Weights of Imprisonment Prisoners.

With the view of confirming my opinion as to the bodily condition of prisoners, I continue to give my attention to their weights on admission, and how these weights are maintained or increased, or reduced during the term of imprisonment. All my weighings of the imprisonment prisoners are very satisfactory; and I find that the percentage of imprisonment prisoners who gain weight or maintain weight under imprisonment, as shown at liberation, is fully 80 per cent.

Weights of Convicts.

The following Table applies to female convicts liberated by expiry of sentences, and also to those who are still undergoing their sentences in the General Prison :—

	No. of Female Convicts weighed.	Numbers			Percentage.
		Stationary in weight.	Gaining.	Losing.	Maintaining or gaining weight.
Female Convicts liberated by expiry of sentence,	179	14	89	76	57
Female Convicts in Prison at last weighing, viz., in September 1860,	320	16	216	88	72

It is proper to observe that the female convicts liberated by expiry of sentence could not have the full benefit of the liberal dietary now in use, and which came into operation in January 1857. Many of the convicts in Prison at last weighing have only been a short time under their present sentence.

DISEASES for which Prisoners were treated during the decennial period 1851 to 1860 inclusive.

DISEASES.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	Total. Diseases treated 1851-60 inclusive.
I. *Zymotic Class*—											
Scarlatina,	...	...	...	...	...	...	...	1	...	...	1
Diarrhœa,	25	17	15	65	20	4	40	...	13	6	205
Influenza,	16	16	8	5	13	11	11	5	...	8	88
Scurvy,	2	5	4	1	2	...	3	2	1	...	20
Ague,	...	...	...	...	...	2	1	1	...	...	4
Erysipelas,	...	1	1	1	1	1	...	2	1	2	10
Syphilis,	3	6	6	2	5	6	11	7	4	10	60
Condylomata,	...	1	...	...	1	...	...	1	...	...	3
Puerperal Fever,	...	...	...	...	1	...	...	...	...	...	1
Chicken Pox,	...	...	...	...	1	...	...	...	1	1	3
II. *Constitutional*—											
Gout,	...	..	...	...	...	...	1	...	...	...	1
Fistula,	...	...	...	1	...	...	...	1	1	2	5
III. *Tubercular*—											
Scrofula,	4	4	5	2	5	2	5	4	7	6	44
Phthisis,	1	4	7	7	6	8	7	4	3	5	52
Marasmus,	...	...	2	...	...	...	...	...	...	...	2
IV. *Of Nervous System*—											
Apoplexy,	1	...	1	...	...	1	...	...	...	...	3
Paralysis,	...	...	...	2	...	1	1	3	1	2	10
Brain Disease,	...	...	1	...	...	3	...	...	1	3	8
Hysteria,	...	1	...	...	...	1	...	...	1	...	3
*Epilepsy,	...	...	...	...	...	...	...	...	...	...	...
°Insanity,	...	...	...	...	...	...	...	...	...	...	...
Ophthalmia,	...	...	1	1	1	...	...	...	...	2	5
V. *Of Organs of Circulation*—											
Heart,	2	...	1	...	...	2	1	2	2	1	11
Aneurism,	...	...	1	...	...	1	...	...	1	...	3
Syncope,	...	...	...	...	...	...	1	1	...	...	2
Pericarditis,	...	...	...	...	...	...	...	...	2	...	2
VI. *Of Respiration*—											
Bronchitis,	1	...	1	...	2	2	...	8	4	4	22
Pleuritis,	2	2	3	...	...	1	4	...	3	4	19
Pneumonia,	4	3	1	...	1	1	...	2	...	2	14
Asthma,	2	1	1	...	1	3	4	3	3	2	20
Hæmoptysis,	1	...	1	...	...	1	1	2	4	3	13
Hydrothorax,	...	...	...	...	...	1	1	1	...	2	5
VII. *Of Digestion*—											
Epistaxis,	...	1	...	...	3	...	1	...	1	...	6
Quinsey,	...	1	1	...	...	...	...	3	1	2	8
Dyspepsia,	4	1	2	...	2	2	...	6	4	3	24
Enteritis,	...	...	1	...	...	...	...	1	1	1	4
Ascites,	...	...	1	...	...	...	1	1	...	1	4
Ulcer of Intestines,	...	...	...	...	...	...	1	1	...	...	2
Hernia,	...	...	...	...	...	...	...	1	1	...	2
Hæmatemesis,	...	...	1	1	...	3	4	2	2	2	15
Hæmorrhoids,	...	...	...	...	...	1	...	...	2	...	3
Constipation,	...	3	...	...	...	1	3	1	...	...	8
Hepatitis,	...	..	1	...	...	...	...	...	...	3	4
Cancer of Stomach,	...	...	...	...	...	...	...	...	...	1	1
VIII. *Of Urinary and Generative Organs*—											
Stricture, &c., of Urethra,	1	...	...	...	1	...	...	3	1	2	8
Gonorrhœa,	...	...	1	...	1	...	1	2	3	3	11
Testitis,	...	...	...	...	1	...	...	1	3	...	5
Hydrocele,	...	...	..	...	...	...	...	1	1	...	2
Masturbatio,	1	...	...	...	...	...	...	...	2	1	4
Cystitis,	...	...	...	...	1	...	...	...	...	...	1
IX. *Of Uterine Organs*—											
Cancer Uteri,	...	...	...	...	...	2	...	1	1	...	4
Uteritis,	...	...	2	...	...	1	...	1	1	...	5
Menorrhagia,	1	2	2	...	...	3	...	1	3	6	18
Polypus,	...	...	...	...	...	...	1	1	...	...	2
X. *Of Locomotive Organs*—											
Rheumatism,	...	4	...	2	3	1	4	5	3	4	26
Sciatica,	...	...	...	...	...	...	1	1	2	1	5
XI. *Of Skin*—											
Ulcer,	2	4	6	...	10	2	2	8	6	5	45
Abscess,	...	2	3	...	2	2	...	3	4	6	22
Itch,	2	2	6	...	5	...	3	2	4	2	26
Ringworm, &c.,	...	...	...	...	1	...	2	1	4	...	8
Favus,	...	...	1	...	1	2	...	1	2	...	7
Pediculi,	...	...	...	...	...	...	...	1	2	...	3
Anomalous Eruption,	...	...	...	...	...	...	1	...	1	...	2
Eczemas,	...	...	..	...	...	...	...	...	...	2	2
XII. *From Accident and Negligence*,—											
Burns and Bruises,	...	...	...	...	...	2	...	3	2	3	10
Fracture,	1	...	...	...	...	2	...	1	1	2	7
Sprains,	...	...	1	...	...	...	...	2	...	2	5
Wounds	...	1	...	1	...	2	1	...	1	2	8
	78	82	89	91	91	78	118	105	112	114	958

° See Table No. XIII. as to Epileptics and others mentally affected.

The following Table shows the percentage of Deaths of the different classes of Prisoners in the last four years :—

CLASS OF PRISONERS.	Number who had been in the Prison.				Percentage of Deaths.			
	1857.	1858.	1859.	1860.	1857.	1858.	1859.	1860.
Imprisonment Males,	539	496	491	462	1.112	0.201	0.203	0.649
Do. Females,	214	219	211	211	1.869	0.913	1.895	2.843
Female Convicts,	208	279	383	401	0.961	2.508	1.827	1.745

Those belonging to the lunatic department are reckoned imprisonment prisoners.

Causes of Death during the decennial period 1851 to 1860 inclusive.

Causes of Death.

FATAL DISEASES OR CAUSES OF DEATH.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	Totals.
Zymotic Class—											
Diarrhœa,	...	...	...	3	...	...	...	...	...	2	5
Influenza,	...	...	...	...	1	...	...	...	...	...	1
Scurvy,	...	...	1	...	...	...	...	...	...	...	1
Tubercular—											
Scrofula,	...	...	...	...	...	...	...	1	...	1	2
Phthisis,	...	1	...	3	5	4	1	4	4	3	25
Marasmus,	...	...	2	...	...	...	...	...	...	...	2
Of Nervous System—											
Paralysis,	...	...	...	1	1	...	...	...	...	1	3
Brain disease,	...	2	...	...	...	2	...	...	...	1	5
Decay from Insanity,	1	...	...	...	...	...	3	...	...	...	4
Of Organs of Circulation—											
Heart,	...	...	...	...	...	1	1	1	1	1	5
Pericarditis,	...	...	...	...	...	...	...	...	1	...	1
Aneurism,	...	...	...	...	...	...	...	...	1	...	1
Of Respiration—											
Bronchitis,	1	...	...	...	...	1	...	...	1	1	4
Pneumonia,	1	2	...	...	...	...	...	1	...	...	4
Asthma,	...	...	...	1	...	...	...	1	...	...	2
Hæmoptysis,	...	...	...	...	...	...	1	...	...	1	2
Hydrothorax,	...	...	...	...	...	1	...	...	...	1	2
Of Digestion—											
Epistaxis,	...	...	...	1	...	...	...	...	...	...	1
Enteritis,	...	...	...	...	...	...	...	...	1	...	1
Peritonitis,	...	...	...	...	...	...	...	...	1	...	1
Hæmatemesis,	...	...	...	...	...	...	1	...	...	...	1
Constipation,	...	...	...	...	...	...	1	...	...	...	1
Cancer of Stomach,	...	...	...	...	...	...	...	...	...	1	1
Of Urinary and Generative Organs—											
Cancer Uteri,	...	...	...	...	...	1	...	1	...	...	2
Bright's disease,	...	...	1	...	...	...	...	...	...	...	1
Menorrhagia,	...	...	...	...	...	...	...	...	...	2	2
Suicides,	1	1	...	...	...	1	...	...	...	...	3
Unknown,	...	1	...	...	...	...	...	...	...	...	1
Old Age,	...	...	...	...	...	...	...	1	...	...	1
Worn Out,	...	1	...	...	3	...	4	...	2	1	11
	4	8	4	9	10	11	12	10	12	16	96

Number associated for Mental Condition.

II. Of the mental condition of Prisoners not in the Lunatic Department

Table, No. XIII. gives the particulars of all placed by the authority of the Surgeon in association, as better suited for their mental condition than separation, with the reasons for their association. The number of this class amounted to 29, of whom the mental condition was—

Imbecile or Weak-minded,	20
Epileptic,	2
Suicidal,	7
	29

Weak-minded and Suicidal in Separation.

In addition to those associated, there are always a considerable number in a lesser degree weak-minded and suicidal, who are noted as requiring special observation, and these at 31st December 1860 numbered 30. These, although not associated, are at times allowed to work at prison service, for a few hours daily, by way of relieving their minds from the severity of separate discipline; and one or two are so turbulent that they cannot be associated without altogether destroying the comfort of their associates. I think it proper to notice particularly one of the cases

which belong to the last category, E. K. or G., 262/18, a female convict. This prisoner I learn was formerly in Brixton, and is reported of as one of the most incorrigible persons, and such she has also been here. She attempted suicide by hanging, and has threatened to destroy herself by any means in her power, and if restrained, to knock out her brains against the walls of her cell. She also threatens to murder prison officers. When associated she so vexed and annoyed her associates that no one could be got to remain beside her, even in her own cell; and she is therefore kept in separation, and has been under restraint for a length of time. For such a violent and dangerous prisoner, a padded cell would be serviceable, where she might be alone and relieved of all restraint, without the fear of her doing herself any injury. Incorrigible Case.

The extent and causes of mental disorder among prisoners having always been matters of much anxiety, I have taken some pains to bring out the number who have required association on mental grounds during the decennial period 1851 to 1860 inclusive; also the dates, whether on or after admission, when this association was called for.

Numbers associated for their mental condition during the ten years 1851-60 inclusive. Number associated 1851-60.

	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	Totals.
Mental Condition—											
Imbecile or Weak-minded,	24	27	25	19	22	22	34	14	21	20	228
Do. and Suicidal,.....	4	3	5	4	4	3	2	2	4	7	38
Epileptic,.....	1	4	7	9	6	4	7	4	11	2	55
	29	34	37	32	32	29	43	20	36	29	321

The average annual number, therefore, put in association by authority of the surgeon on account of their mental condition during these ten years was 32. Taking the data before me for the last three years, of the weak-minded and suicidal not associated, the average annual number is 35. The total thereof of all noted for mental weakness amounts to an average of 67 prisoners per annum. Average annual Weak-minded.

On further analysing the Table of those associated, the following appear as the dates, on or after admission, at which association seemed necessary :— Dates of Association after Admission.

Associated on admission, and under 3d month of imprisonment,	.	123
Do. 3d month and under 6th month do.,	.	52
Do. 6th month and under 9th month do.,	.	62
Do. 9th month and under 12th month do.,	.	40
Do. 12th month and under 18th month do.,	.	38
Do. above 18 months, ...	.	6
		321

That such a large proportion were associated on admission and under the 3d month of imprisonment is interesting, and renders it probable that mental weakness was to some extent present in many, which was not very clear on admission, although soon after manifested. It is very probable also, that in these cases there was a congenital tendency which was developed by separation; for there can be little doubt, that the deterioration of body and mind in the criminal classes necessarily leads to diseases and derangement of the nervous system, apart altogether from the effects of the prison discipline of separation.

III. Of the Department for Criminal Lunatics.

With the exception of those who have been cut off by fatal diseases, the health of those in the Lunatic Department has been good. Four have died in 1860, one male and three females, of whom particulars are given in the Table of Deaths. The number and details of those who have been confined in this department appear in Table No. XII. Five of the admissions were prisoners in whom insanity supervened while undergoing their sentences in the Main Prison, and one on admission was found to be insane, and sent directly to the Lunatic Department, viz. :— Health and Death of Criminal Lunatics.

Imprisonment Prisoners. M.	F.	Convicts. F.	Total Admissions from Main Prison.
4	1	1	6

The following is a statement showing the number who have been sent from the Main Prison to the Lunatic Department during the decennial period 1851-60 inclusive :— Admissions from Main Prison to Lunatic Department.

Years,.....	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	Total.
	2	1	0	1	0	2	4	4	5	6	25

This shows a very considerable increase during the latter, compared with the former quinquennial period.

From 1851 to 1855..... 4 admissions
1856 to 1860.....21 admissions

The total admissions to the Lunatic Department have been as follows during the ten years 1859-60 inclusive :— Total Admissions from 1859-60 inclusive.

Years,.....	1851	1852	1853	1854	1855	1856	1857	1858	1859	1860	Total.
	11	10	3	3	6	5	9	10	13	8	78

Recreations, &c.

It has been felt a duty towards the insane to introduce among them a number of amusing games for harmless recreation, which seems to have materially added to their happiness, and restraint has with one or two exceptions been entirely dispensed with.

Of Juveniles.

IV. Of the Juvenile Department I have little to say. This class of prisoners has not in any way suffered by their transference to the Main Prison, and their bodily and mental condition are quite unexceptionable.

I have the honour to be, Sir, your most obedient Servant,

J. B. Thomson, *Resident Surgeon.*

To John Hill Burton, Esquire,
&c. &c.

No. XI.—Report by the Governor and Resident Surgeon of the General Prison at Perth, of the Deaths of Prisoners

Current Number. M.	Current Number. F.	Name.	Age at Commitment to Prison.	Where Tried.	By whom tried.	Date of Sentence.	Sentence.	Date of Admission into the General Prison.	Date of Death.	Period in Prison. Months.	Period in Prison. Days.	Where Interred.	Disease.	Whether Contracted before or after Admission.	Probable Cause of Disease.	Remarks.
...	395/18	J. F. or L.	47	Wigton	Sheriff-Court	1859 July 5	9 Months' Imprisonment	1859 Oct. 13	1860 Feb. 1	3	18	Within the Precincts of the Prison.	Inflammation of Windpipe.	Before .	Cut throat	This woman came here Insane, and suffering from a partially cicatrized wound of windpipe.
...	360/17	E. P S.	20	Glasgow	Circuit-Court	1858 Sept. 28.	4 Years' Imprisonment	1858 Dec. 30	Feb. 12	13	13	Do.	General Paralysis	After .	Brain disease	This woman was Insane, and died from general Paralysis—a frequent cause of death among the Insane.
...	301/18	D M'I.	19	Do.	Circuit-Court	1857 May 2	6 Years' Penal Servitude	1859 August 28	Feb. 27	5	30	Do.	Phthisis . . .	After .	Hereditary	Phthisis supervened on Pneumonia.
...	80/18	J. T.	26	Do.	Sheriff-Court.	1859 March 3	18 Months' Imprisonment	1859 April 12	Feb. 28	10	16	Do.	Chronic Diarrhœa	After . .	Worn-out	There was a rapid and general failure of all the vital functions.
...	326/18	E. M'G. or M'L.	28	Edinburgh	High Court of Justiciary	1857 Nov. 7	4 Years' Penal Servitude	1859 August 28	March 31	7	3	Do.	Worn-out . .	Before .	Syphilis	On admission weak, sunk under gradual decay of body and mind.
228/18	...	J. R.	25	Tain.	Sheriff-Court	1859 May 4	12 Months' Imprisonment	1859 August 1	April 28	8	27	Do.	Hydrothorax	After . .	Unknown .	An attack of Bronchitis ended in Hydrothorax.
..	183/18	E. S. or F. .	49	Glasgow	Circuit-Court	1858 Dec. 21	6 Years' Imprisonment	1859 June 27	May 16	10	19	Do.	Scrofula	Before .	Hereditary	On admission, worn-out by open sores, &c.
...	119/19	M. M.	18	Do.	Circuit-Court	1860 April 26	18 Months' Imprisonment	1860 May 5	July 9	2	4	Do.	Phthisis . . .	Before .	Hereditary	On admission, both lungs tuberculous, and case hopeless.
241/6	...	J. D.	35	Do.	Circuit-Court	1846 Dec. 22	Found to be unfit for trial from the state of his mind, and sentenced to be detained in Prison until further orders of the High Court of Justiciary	1847 Sept. 20	July 29	154	9	Do.	Heart Disease .	After . .	Unknown .	Died suddenly.
...	61/19	E. R. or W.	30	Aberdeen	Sheriff-Court	1860 Feb. 29	12 Months' Imprisonment	1860 March 7	August 28	5	21	Do.	Cancer of Stomach	Before .	Unknown .	On admission delicate, after which the disease made rapid progress.
...	77/18	J. M'G.	29	Perth .	Sheriff-Court	1859 March 14	Found to be Insane and not fit for trial, and ordered to be detained in the Prison of Perth until Her Majesty's pleasure be known	1859 April 9	August 31	16	22	Do.	Diarrhœa	After . .	Gradual decay and Insanity	For several months has shown a gradual decay.
...	142/19	E. C.	23	Aberdeen	Circuit-Court	1860 April 10	8 Years' Penal Servitude	1860 May 25	Oct. 14	4	19	Do.	Phthisis . . .	Before .	Hereditary	On admission both lungs were tuberculous.
...	191/15	E. H. or A.	45	Jedburgh	Circuit-Court	1856 April 15	6 Years' Penal Servitude	1856 June 9	Oct. 20	52	11	Do.	Menorrhagia	After . .	Period of life	
...	173/17	E. A.	22	Edinburgh	High Court of Justiciary	1858 May 10	6 Years' Penal Servitude	1858 June 12	Nov. 7	28	26	Do.	Inflammation of Brain	After . .	Unknown .	Organic Disease of the Brain was probably latent for some time.
...	295/18	J. C. or T.	39	Glasgow	Circuit-Court	1857 April 30	4 Years' Imprisonment	1859 August 26	Dec. 24	15	28	Do.	Menorrhagia	After . .	Worn out by Dissipation	Began to break down soon after admission from Ayr.
243/19	...	H. H.	21	Do.	Circuit-Court	1860 Sept. 12	18 Months' Imprisonment	1860 Sept. 22	Dec. 30	3	8	Do.	Hemoptysis	Before .	Do.	Rupture of a bloodvessel took place suddenly, from which he never rallied.

I certify that the dates of death, the diseases, whether before or after admission, probable cause of disease of the Prisoners above-named, and the relative remarks, are correct, the columns having been filled up under my direction.

J. B. Thomson, *Resident Surgeon.*

I certify that the current numbers, names, ages, where tried, by whom tried, dates of sentence, sentences, dates of admission, period in prison, and where interred, are correct; and also that means were used to acquaint the relatives of the above-named Prisoners, in order that they might have an opportunity of removing the bodies for interment, if they wished to do so.

Ja. Stuart, *Gov.*

General Prison, Perth, 2d January 1861.

No. XII.—Return by the Resident Surgeon of the General Prison at Perth, applicable to those Prisoners who have been confined in the Department for Criminal Lunatics during the year 1860.

	M.	F.	TOTAL.
Insane in Custody at 31st December 1859, . .	21	12	33
Admitted during 1860, ...	5	3	8
Total during 1860, . .	26	15	41
Liberated and removed in 1860, ...	7	6	13
Remaining in Custody at 31st December 1860, . .	19	9	28

No.	C/n.	Name.	Age on committal to Prison. M.	Age on committal to Prison. F.	Whence brought.	Brought to Lunatic Department.	Afterwards transferred to Lunatic Department.	Date of Admission to Lunatic Department.	Offence of which Accused or Convicted.	By what Court Tried.	Judgment of Court or other Judicial proceeding, with Date.	Whether admitted on Judicial Finding or Medical Certificate of Lunacy.	Form of Insanity.	Removed during the year. Date.	Removed during the year. Method.	REMARKS.
1	316/5	J. J., Jr.	11	...	Royal Lunatic Asylum, Glasgow.	1	...	Dec. 25, 1846	Assault .	Sheriff Court, Lerwick.	Found not to be a fit subject for trial on account of imbecility and dumbness, and sentenced to imprisonment until further orders of the Court, or of the High Court of Justiciary, 5th May 1845.	Judicial Finding.	Idiocy .	.....	.....	*Naturaliter Idiota;* Mischievous, dumb.
2	222/5	E. L.	...	35	Do.	1	...	... 29, ...	Murder . .	Circuit Court, Jedburgh.	Found to be insane and not fit for trial, and sentenced to be imprisoned until further orders of the High Court of Justiciary, 18th September 1845.	Do.	Homicidal Mania.	.. ...	.....	Had hallucinations, and was liable to violent paroxysms of mania; murdered her mother under the delusion that she was a witch.
3	95/6	T. M'K.	37	...	Glasgow Prison.	1	...	May 4, 1847	Murder . .	Circuit Court, Glasgow.	On trial, found to be insane, and not an object of punishment, and sentenced to be detained in Prison all the days of his life, or until sufficient caution be found for his safe keeping in custody during life, 6th May 1839.	Do.	Do.	.....	.....	Had hallucinations; never had lucid intervals.
4	111/6	A. R.	30	...	Stirling Prison.	1	...	... ...	Assault . .	Sheriff Court, Stirling.	Found to be insane and not a fit subject for trial, and sentenced to be detained in Prison, subject to future orders of Court, 26th May 1841.	Do.	Mania.	.....	.....	Has delusions about his being a great personage; has scarcely ever been heard to speak for years.
5	169/6	T. B.	25	...	Ayr Prison	1	...	July 9, ...	Assault with intent to ravish.	Circuit Court of Justiciary, Ayr.	Found to be insane and not a fit subject of trial, and sentenced to be detained in custody until further orders of the High Court of Justiciary, 15th September 1843.	Do.	Do.	.....	.....	
6	241/6	J. D.	35	...	Glasgow Prison.	1	...	Sept. 20, ...	Murder or Culpable Homicide.	Circuit Court of Justiciary, Glasgow.	Found to be unfit for trial, from the state of his mind, and sentenced to be detained in Prison until further orders of the High Court of Justiciary, 22d December 1846.	Do.	Do.	July 29, 1860	Died.	Had delusions about persons visiting and tormenting him.
7	242/6	M. P.	...	34	Morningside Lunatic Asylum.	1	...	... 23, ...	Wilful fire-raising and malicious mischief.	Circuit Court of Justiciary, Jedburgh.	Found to be unfit for trial from the state of her mind, and to be detained in Prison until further orders of the High Court of Justiciary, 4th April 1842.	Do.	Do.	.....	.....	
8	76/9	P. P. or S.	50	...	Edinburgh Prison.	1	...	Mar. 29, 1850	Murder .	High Court of Justiciary, Edinburgh.	Found to be insane and not a proper object of trial, and to be detained in custody until further orders of Court, 16th May 1850.	Do.	Homicidal Mania.	.....	.....	A powerful and dangerous man, with a strong homicidal tendency; he murdered two persons in one night.
9	171/9	J. D.	28	...	Dumbarton Prison.	1	...	June 15, ...	Assault, with intent to rob	Sheriff Court, Dumbarton.	Found to be insane and not fit for trial, and ordered to be detained in Prison until removed therefrom by competent authority, 7th June 1850.	Do.	Mania .	.....	.....	
10	172/9	W. K.	22	...	Perth County Prison.	1	...	... 18, ...	Murder . .	Circuit Court, Perth.	Found not in a fit state to be put on his trial, and deserted the diet *pro loco et tempore*, and grants warrant to commit him to the Prison of Perth, therein to be detained until further orders of the Court of Justiciary	Do.	Homicidal Mania	.....	.....	*Naturaliter Idiota;* was confined in Lunatic Wing untried from 18th June, until brought before the Circuit Court.

11	310/9	M. R.	27	...	Stirling Prison.	1	...	Nov. 12, ...	Theft by house-breaking and previous conviction.	Circuit Court, Stirling.	Found to be insane and not fit for trial, and to be detained in Prison until further orders of Court, 12th April 1850.	Do.	Mania.	.....	.....	
12	27/10	R. B. or M.	...	30	Edinburgh Prison.	1	...	Mar. 14, 1851	Assault . .	High Court of Justiciary, Edinburgh.	Found to be insane and not a proper object of trial, and ordered to be detained in Prison until further orders of Court, 12th March 1851.	Do.	Do.	.....	.....	
13	132/11	I. B.	...	50	Perth County Prison.	1	...	May 14, 1852	Murder . .	Circuit Court of Justiciary, Perth.	On trial, found to have been insane at the time of committing the offence, and not an object of punishment, and adjudged to be detained in Prison all her life, or at least until further orders of Court, 29th April 1852.	Do.	Homicidal Mania.	.....	.....	Murdered her mother; is a hypochondriacal and ill-tempered woman.
14	74/12	J. D. S.	24	...	Glasgow Prison	1	...	Mar. 18, 1853	Murder. .	Circuit Court of Justiciary, Glasgow.	Death, but commuted to transportation for life, on account of insanity, 4th January 1853.	Medical Certificate.	Do.	.....	... .	
15	234/13	H. M'N	27	...	Ayr Prison	1	...	July 22, 1854	Rape. .	Circuit Court, Ayr.	Found to be insane, and not fit for trial, and adjudged to be imprisoned until further orders of the Court of Justiciary, 18th April 1854.	Judicial Finding.	Mania.	.....	.....	
16	470/14	W. G. T.	35	...	Perth County Prison.	1	...	Oct. 13, 1855	Assault to the effusion of blood and serious injury of the person	Circuit Court of Justiciary, Perth.	Found, from the state of his intellect, not a proper object for trial, and to be detained in Prison subject to the future orders of the High Court, 2d October 1855.	Do.	Idiocy.	.....	.....	*Naturaliter Idiota.*
17	494.14	D. R.	19	...	Perth County Prison.	1	...	Nov. 2, ...	Malicious mischief .	Sheriff-Court, Perth.	On trial found to have been insane, and diet deserted *pro loco et tempore*, and adjudged to be detained in Prison to abide the further orders of Court, 22d October 1855.	Do.	Mania.	.....	.....	Mischievous in nature.
18	247/15	M. F. or M'L.	...	28	Glasgow Prison.	1	...	July 15, 1856	Murder	Circuit Court, of Justiciary, Glasgow.	Found to have been insane at the time of committing the act charged, and not a proper object of punishment, and adjudged to be detained in Prison subject to the future orders of the High Court of Justiciary, 2d May 1856.	Do.	Homicidal Mania.	.....	.....	In the puerperal state; and, under a fit of jealousy, destroyed her child.
19	43/16	H. S.	27	...	Edinburgh Prison.	1	...	Feb. 19, 1857	Murder .	High Court of Justiciary, Edinburgh.	Found to be insane, and not fit for trial, and ordered to be detained in the General Prison at Perth, subject to future orders of the Court, 16th February 1857.	Do.	Do.	.....	.....	When in the Greenock poorhouse, murdered one of the paupers.
20	346/14	J. M'K.	...	22	Paisley Prison	...	1	May 23, ...	Child-murder	Circuit-Court, Glasgow.	14 years' transportation, 27th September 1854.	Medical Certificate.	Mania.	.....	.....	A convict under sentence of fourteen years' transportation. Insanity supervened while confined in the General Prison. She is noisy and turbulent.
21	358/16	A. M'P.	26	...	Inverness Prison.	1	...	Dec. 21, 1857	Murder .	Circuit Court of Justiciary, Inverness.	Found to be insane at the time he committed the act, and adjudged to be detained in Prison, subject to future orders of the High Court of Justiciary, 30th September 1857.	Judicial Finding.	Homicidal Mania.	.....	.....	Under delusions—murdered three persons, his father, mother, and aunt, in one night.
22	203/17	D. C.	37	...	Perth County Prison.	1	...	July 30, 1858	Murder .	Circuit Court of Justiciary, Perth.	Found to be insane and not fit for trial, and ordered to be kept in strict custody in the General Prison at Perth until her Majesty's pleasure be known, 7th October 1858.	Do.	Homicidal Mania.	.....	.....	Has delusions that he is visited by good and evil spirits; also by the three Persons in the Godhead. Irritable, passionate, proud.
23	214/17	T. A. S. or F. or T. or T.	39	...	Edinburgh Prison.	1	...	Aug. 14, 1858	Murder .	High-Court of Justiciary, Edinburgh	Found to be insane and not fit for trial, and ordered to be kept in strict custody in Prison until her Majesty's pleasure be known, 19th July 1858.	Do.	Homicidal Mania.	.....	.....	Has delusions, that poison has eaten away his brain and stomach; suicidal.
24	300/17	J. S.	23	...	Stirling Prison.	1	...	Nov. 1, ...	Theft .	Untried .	Committed on warrant of Sheriff until liberated in due course of law.	Medical Certificate.	Imbecility.	Feb. 25, 1860	Sent back recovered.	
25	266/15	M. M'C. or M'P.		24	Perth Prison	...	1	Jan. 1, 1859	Theft, habit and repute, and prev. conviction.	Circuit-Court, Perth.	4 years' penal servitude, 1st May 1856, .	Do.	Mania.	Apr. 30, 1860	Sent back for liberation	A convict admitted to Main Prison, May 1, 1856. Is violent, incoherent, and has delusions that persons visit and torment her by night.

No. XII.—Return by the Resident Surgeon, applicable to those Prisoners who have been confined in the Department for Criminal Lunatics—*continued.*

No.	C/n.	Name.	Age on committal to Prison. M.	Age on committal to Prison. F.	Whence brought.	Brought to Lunatic Department.	Afterwards transferred to Lunatic Department.	Date of Admission to Lunatic Department.	Offence of which accused or convicted.	By what Court tried.	Judgment of Court or other Judicial proceeding, with Date.	Whether admitted on Judicial Finding or Medical Certificate of Lunacy.	Form of Insanity.	Removed during the year. Date.	Removed during the year. Method.	REMARKS.
26	1/18	A. L.	28	...	Banff Prison	1	...	Jan. 3, 1859	Breach of trust & embezzlement.	Untried .	Committed on warrant of Sheriff until liberated in due course of law, 30th Nov. 1858.	Medical Certificate.	Idiocy.	Dec. 28, 1860	Sent back to the Prison, where he came by order of the Gen. Board	*Naturaliter idiota.* Has a tendency to possess himself of dangerous weapons. At times excited. Has a delusion that he is visited by ghosts dressed in white robes.
27	39/18	B. M'G.	...	20	Glasgow Prison.	1	...	Feb. 22, ...	Theft and prev. con.	Untried .	Do. do. 17th Dec. 1858.	Do.	Imbecility.	Do.	Do.	Without moral control ; very imbecile.
28	41/18	A. M.	23	...	Perth County Prison.	1	...	... 22, ...	Murder .	High Court of Justiciary.	Found to be insane at the time of committing the homicide charged, and not a proper object of punishment, and ordered to be kept in strict custody in Prison, 16th Nov. 1858.	Judicial finding.	Homicidal Mania.	.....	.....	Certified insane on admission ; but has shown no mental disorder or delusion here.
29	27/18	J. M'G.	...	29	Ditto	1	...	April 9, ...	Concealment of Pregnancy	Sheriff-Court, Perth.	Found to be insane, and not fit for trial, and ordered to be detained in Prison until her Majesty's pleasure shall be known, 14th March 1859.	Do.	Mania.	Aug. 31, 1860	Died.	Congenitally weak-minded. Became suddenly insane after being served with her indictment, which she thought was an order for her execution. She was noisy and at times violent.
30	360/17	E. P. S.	...	20	Glasgow Prison.	...	1	Aug. 11, ...	Theft and previous conviction.	Circuit-Court, Glasgow.	4 years' penal servitude, 28th September 1858,	Medical Certificate.	Imbecility.	Feb. 12, 1860	Died.	In Edinburgh Prison cut her throat with a razor. Her mind congenitally weak. Gradually gave way to delusions—that her sister was at hand and speaks to her; that her soul cannot be saved; that she was the virgin mother of our Lord.
31	395/18	J. F. or L.	...	47	Wigtown Prison.	1	...	Oct. 13, ...	Falsehood, fraud, and wilful imposture.	Sheriff-Court, Wigtown.	9 months, 5th July 1859, ...	Do.	Suicidal Mania.	Feb. 1, 1860	Died.	On admission had a wound into the windpipe, having repeatedly attempted suicide. Incapable of swallowing from the inflamed state of larynx and œsophagus. Very incoherent.
32	88/15	C. M'K.	...	21	Glasgow Prison.	...	1	Dec. 20, ...	Theft and pre. con.	Circuit-Court, Glasgow.	15 years' transportation, 8th Jan. 1856, .	Medical Certificate	Mania.	.....	.....	Admitted to Main Prison, March 19, 1856; Imbecile, May 7, 1859 ; sent to Imbecile Ward at its opening in Aug. 1859. Has delusions that she gets poison and rats in her food. She is violent, threatens, and strikes. Was formerly in Brixton and Millbank.
33	507/18	S. W.	46	...	Edinburgh Prison.	1	...	Dec. 31, ...	Assault and previous conviction.	Sheriff-Court, Edinburgh.	12 months' imprisonment, 13th Jan. 1859,	Do.	Acute Mania.	Jan. 12, 1860	Sent Back for liberation	Retransmitted from Edinburgh Prison, Dec. 31, 1859.
34	33/18	A. D.	...	26	Aberdeen Prison.	..	1	Jan. 14, 1860	Theft	Sheriff-Court, Aberdeen.	12 months' imprisonment, 5th February 1859,	Do.	Do.	Feb. 4, ...	Do.	Admitted to Main Prison 16th February 1859. Sent to Imbecile Ward, 10th Jan. 1860, and to Lunatic department, same date, with delusions that she is to be imprisoned for 26 years; that she is to be hanged for killing some person, &c.
35	92/18	F. M'M.	36	...	Stirling Prison.	...	1	May 8, ...	Theft and previous conviction	Circuit Court, Stirling.	18 months' imprisonment, 12th April 1859,	Do.	Mania.	Oct. 11, ...	Do.	Sent to Imbecile Ward 24th May 1859, with melancholy fears about his family; incoherent, and at times threatening and dangerous.

36	31 118	J. B.	50	...	Wigton Prison.	...	1	June 15, ..	Assault, to effusion of blood, serious injury of person, and danger to life.	Sheriff-Court, Wigtown.	12 months' imprisonment, 5th August 1859,	Do.	Do.	Aug. 2, ...	Sent back for liberation.	On admission, certified imbecile and dangerous. Sent to Imbecile Ward on 1st Nov. 1859; his mind getting worse; was incoherent; given to strike suddenly; at times outrageous and dangerous.
37	183/19	A. T.	51	...	Lerwick Prison	1	...	July 4, ...	Theft	Untried .	Committed for trial, until otherwise liberated in due course of law, 7th May 1860.	Do.	Imbecility.	.....	.....	Certified on admission to be labouring under insanity; given to destroy bedding and furniture; filthy; addicted to petty theft.
38	47/19	D. G.	30	...	Edinburgh Prison.	...	1	July 10, ...	Theft and previous conviction	Sheriff-Court, Edinburgh.	12 months' imprisonment, 16th Feb. 1860,	Do.	Mania.	.....	.....	On 6th July 1860; sent over to Imbecile Ward on 10th, much worse, and sent to Lunatic department; incoherent; with delusions that he is a great artist, &c.
39	191/19	T. C.	27	...	Edinburgh Prison.	..	1	July 18, ...	Bigamy .	Sheriff-Court, Edinburgh.	12 months' imprisonment, 16th July 1860,	Do.	Melancholia	Sept. 21, ...	Transferred to Imbecile-Ward.	Certified on admission to be of facile mind, and formerly insane. On admission he was insane, excited, incoherent, and was sent direct to the Lunatic department. Having recovered from his insanity, but weak-minded, was sent to Imbecile Ward, 21st Sept. 1860.
40	177/	J. S.	...	24	Edinburgh Prison.	...	1	Sept. 8, ...	Theft and previous conviction	High Court of Justiciary.	8 years' penal servitude, 14th Feb. 1859,	Do.	Mania.	.....	.....	On admission imbecile, and sent to Imbecile Ward; was formerly insane, and three years in an asylum. Has again become insane, with a suicidal tendency.
41	284/19	E. P. or M	...	38	Stirling Prison.	1	...	Oct. 26, ...	Murder .	Circuit-Court, Stirling.	Found to be insane at the time of committing the murder charged, and not a proper object of punishment, and ordered to be kept in strict custody in the Prison of Stirling until Her Majesty's pleasure be known, 21st Sept. 1860.	Do.	Monomania	.....	.....	She was found insane by a jury. Her delusion is that she and her family are to be burned in the Poorhouse at Stirling, and to avert this fate she threw herself and two of her children into the canal at Falkirk; one of the children was drowned.

J. B. THOMSON, *Resident Surgeon.*

General Prison, Perth, 2d January 1861.

No. XIII.—Return for the Year 1860, of Prisoners put by the authority of the Resident Surgeon, in Association, as better suited to their Mental Condition than Separation, with the reasons for Associating in each case.

ASSOCIATED DURING THE YEAR 1860. ASSOCIATED AT 31ST DECEMBER 1859.

No.	Current Number	Name.	Age when committed to Prison. M.	Age when committed to Prison. F.	Prison whence Received.	Date of Sentence.	Duration of Sentence.	Date of Admission.	Date of putting on Treatment.	Condition.	Probable Cause of Condition.	Whether before or after Admission.	At the end of the Year. Not in Prison.		In Prison. In Association.	In Prison. In Separation.	In Prison. In Lunatic Department.	
1	146/17	M. M'G. or J.		35	Glasgow.	April 27, 1858.	4 years	May 18, 1858.	June 27, 1858.	Epileptic.	Epilepsy.	Before.			1			
2	127/17	W. J.	26		Dundee	Oct. 14, ...	18 months.	Nov. 26, ...	Mar 18, 1859.	Do.	Congenital.	Do.	Liberated.....	April 14,				
3	52/18	F. W.	27		Jedburgh.	Mar. 11, 1859.	12 ...	Mar. 16, 1859.	April 13, ...	Imbecile.	Do.	Do.	Sent back for Liberation.	Mar. 9,				
4	90/17	S. or S. or J. C	28		Edinburgh.	... 28, ...	12 ...	April 20, 1859.	... 22, ...	Do.	Do.	Do	Liberated.....	Mar. 28,				
5	105/18	A. M'A.		18	Perth.	April 22. ...	18 ...	... 27. ...	... 27. ...	Epileptic.	Epilepsy.	Do.	Do.	Oct. 22,				
6	2[illegible]/17	M. M'E. or R.		24	Glasgow.	Sept. 29, 1858.	2 years.	Oct. 12, 1858.	May 2, 1859.	Imbecile.	Congenital.	Do.	Sent back for Liberation.	Sept. 28,				
7	44/18	T. E.	26		Edinburgh.	Feb. 14, 1859.	12 months.	Mar. 5, 1859.	... 12, ...	Epileptic.	Do.	Do.	Liberated.....	Feb. 14,				
8	83/18	F. M'M.	20		Stirling	April 22. ...	18 ...	April 29. ...	... 24. ...	Imbecile.	Do.	Do.	Sent back for Liberation.	Oct. 11,				
9	100/18	B. S.	40		Glasgow.	... 29, ...	15 ...	May 7, ...	... 30, ...	Epileptic.	Epilepsy.	Do.	Liberated.....	July 26,				
10	177/18	J. S.		24	Edinburgh.	Feb. 14, ...	8 years.	June 27, ...	June 27, ...	Imbecile.	Was Insane.	Do.					1	Sept. 8, 1860.
11	21/18	J. G.	19		Inverness-shire.	Jan. 17, ...	21 months.	Jan. 25, ...	July 19, ...	Do.	Congenital.	Do.	Sent back for Liberation.	Jan. 10,				
12	258/18	J. B. or S.		46	Stirling.	April 12, ...	4 years.	Aug. 11, ...	Aug 20, ...	Epileptic.	Epilepsy.	Do.			1			
13	300/18	J. R.		28	Ayr.	April 22, 1857.	6 ...	... 26, ...	... 26, ...	Do.	Do.	Do.			1			
14	98/18	A. T. or C.		32	Edinburgh.	Sept. 15, 1859.	12 months.	Sept. 20, ...	Oct. 10, ...	Do.	Unknown.	Doubtful.	Liberated,.....	Sept. 15,				
15	283/18	J. B	27		Stirling.	July 22, ...	12 ...	July 27, ...	... 28, ..	Imbecile.	Congenital.	Before.	Do.	July 22,				
16	311/18	J. B.	30		Wigtown.	Aug. 8, ...	12 ...	Aug. 28, ...	Nov. 1, ...	Do.	Do.	Do.	Sent back for Liberation.	Aug. 2,				
17	178/17	M. O'D.		34	Dundee.	May 4, 1858.	4 years.	June 14, 1858.	... 17, ...	Do.	Do.	Do.				1	April 21, 1860	
18	49/18	A. S.	74		Hamilton.	Nov. 7[illegible], 1859.	3 months	Nov. 17, 1859	... [illegible] ...	Do.	Do.	Do.	Liberated, ...	Aug. 12,				
19	57/18	J. F.	72		Glasgow.	Sept. 15. ...	9 ...	Sept. 21. ...	... 28. ...	Epileptic.	Unknown.	Do.	Do.	June 15.				
20	45/18	M. B.		28	Dundee	Oct. 3, ...	6 years.	Nov. 10, ...	... 10. ...	Do.	Congenital.	Do.			1			
21	47/18	M. G.		19	Stirling.	April 18, ...	4 ...	... 22. ...	... 22. ...	Imbecile.	Do.	Do.			1			
22	227/17	C. J. or M'C.		22	Edinburgh.	July 24, 1858	4 ...	Aug. 21, 1858.	Dec. 5. ...	Suicidal.	Fit of Rage.	After.			1			
23	287/16	S. S.		25	.....	May 15, 1860.	4 ...	June 10, 1860.	... 24. ...	Imbecile.	Congenital.	Before.	Sent back for Liberation.	May 14,				
24	506/18	R. W.	39		Hamilton.	Dec. 22 1859.	12 months.	Dec. 29. 1859.	... 29. ...	Epileptic.	Unknown.	Do.	Liberated, ...	Dec. 22,				
25	80/18	A. D.		26	Aberdeen.	Feb. 5. 1859.	12 months	Feb 16. 1859.	Jan. 10. 1860.	Imbecile.	Remorse.	After.	Do.	Feb. 4,				
26	29/19	A. M'L.	22		Edinburgh.	Jan. 5, 1860.	18 ...	Jan. 12, 1860.	... 12, ...	Epileptic.	Congenital.	Before.			1			
27	86/18	J. T.		26	.....	Mar. 3, 1859.	18 ...	April 12, 1859.	... 19, ...	Imbecile.	Do.	Do.	Died, ...	Feb. 8,				
28	208/17	J. C. or C.	18		.....	Nov. 4, 1858.	18 ...	Nov. 11, 1858.	Feb. 18, ...	Do.	Separation.	After.	Sent back for Liberation.	May 4,				
29	254/15	J. R.		18	.....	June 28, 1856.	4 years	July 22, 1856.	April 5, ...	Suicidal & Homicidal	Imbecile.	Do.	Liberated.	June 23.				
30	280/18	B. M.	25		.....	Aug 26, 1859.	12 months.	Sept. 2, 1859.	... 11, ...	Imbecile.	Congenital.	Before.	Sent back for Liberation.	Aug. 25,				
31	300/18	A. W.		17	Ayr.	Oct. 6, 1857.	4 years.	... 1, ...	... 20, ...	Suicidal.	Fit of Rage.	After.				1	April 29, 1860	
32	90/16	A. B. or G.		25	Dundee.	April 12, 1860.	12 months.	April 25, 1860.	... 25, ...	Do.	Weak-minded.	Before.				1	Aug. 11, 1860	
33	117/18	G. B.	17		.....	... 22. 1859.	18 ...	... 29, ...	... 26, ...	Imbecile.	Separation.	After.	Do.	Oct. 20,				
34	105/19	R. W.	23		Glasgow.	... 24, 1860.	18 ...	May 3, ...	May 3, ...	Epileptic.	Unknown.	Before.				1	Dec. 25, 1860.	
35	150/18	N. L.	17		Aberdeen.	June 6, 1859.	12 ...	June 14, 1859.	... 21, ...	Imbecile & Suicidal	Congenital.	Do.	Do.	June 5;				
36	147/19	A. B.		16	Dundee.	April 10, 1860.	4 years.	May 26, 1860.	... 26, ...	Imbecile.	Hereditary.	Do.			1			
37	147/19	A. C. or T.		41	.....	... 12, ...	4 ...	... 26, ...	... 26, ...	Do.	Formerly Insane.	Do.			1			
38	149/19	B. K.		20	.....	... 11. ...	Life.	... 26. ...	... 26, ...	Suicidal.	Remorse.	Do.			1			
39	299/17	M. A. M'E. or R.		24	Glasgow.	Sept. 22, 1858.	2 years.	Oct. 12, 1858.	June 22, ...	Imbecile.	Unknown.	After.	Do.	Sept. 28,				
40	47/19	D. G.	39		Edinburgh.	Feb. 16, 1860.	12 months	Feb. 22, 1860.	July 1. ...	Do.	Congenital.	Before.					1	July 10, 1860.
41	115/18	J. S	24		Dundee.	April 20, 1859.	18 ...	April 29, 1859.	Aug. 8, ...	Do.	Separation.	After.	Received a free pardon from Her Majesty	Sept. 12,				

Associated during 1860.																							
	42	273/18	H. M.	15		Edinburgh.	July 28, 1859.	15 months.	Aug 18, 1859.	Aug. 16, 1860	Weak-minded.	Separation	After.	Liberated.....	Oct. 28,								
	43	42/19	J. B.	15		Haddington.	Jan. 30, 1860.	12 ...	Feb. 8, 1860.	... 24, ..	Do.	Congenital.	Before.			1							
	44	474/18	M. P. or M'N.		44	Glasgow.	Oct. 5, 1859.	5 years.	Nov. 22, 1859.	... 27, ...	Do.	Separation.	After.			1							
	45	95/18	P. M'G.	16		Stirling.	April 13, ...	18 months.	April 20, ...	... 28, ...	Do.	Congenital.	Before.	Do.	Oct. 13,								
	46	28/19	J. H.	21		Glasgow.	Jan. 5, 1860.	9 ...	Jan. 14, 1860.	Sept. 21, ...	Do.	Separation.	After.	Sent back for Liberation.	Oct 4,								
	47	235/19	S. D. or W. D.	20		Paisley.	Sept. 11, ...	12 ...	Sept. 21, ...	... 21, ..	Suicidal.	Mental Depression.	Before.			1							
	48	191/19	T. C.	27		Edinburgh.	July 16, ...	12 ...	July 18, ...	... 21, ...	Imbecile.	Congenital.	Do.			1							
	49	501/18	T. M'G.	14		.....	Dec. 14, 1859.	15 ...	Dec. 20, 1859.	Oct. 2, ...	Weak-minded.	Separation.	After.			1							
	50	66/19	A. M'Q.		19	.....	Mar. 12, 1860.	18 ...	Mar. 23, 1860.	... 3, ...	Do.	Do.	Do.			1							
	51	167/19	E. S.		19	Glasgow.	April 23, ...	3 years.	May 28, ...	... 29, ...	Suicidal.	Mental Depression.	Do.			1							
	52	11/19	J. M.	33		.....	Dec. 29, 1859.	18 months.	Jan. 7, ...	Nov. 29, ...	Imbecile.	Congenital.	Before.			1							
	53	458/18	M. W.		22	Dumfries	Sept. 24, ...	10 years.	Nov. 21, 1859.	Dec. 8. ...	Do.	Worn-out in body and mind	Do.			1							

Remarks.—33/18, A. D. Admitted to Main Prison 16th February 1859, sent to Imbecile Ward 10th January 1860, became Insane 14th January 1860, under the delusion that she was to be confined in Prison or hanged for having killed some person. The attack was one of acute Mania, and when removed to Aberdeen Prison she was much relieved. 80/18, J. T. This patient died worn-out in bodily and mental powers. 308/17, J. C. or C. This young lad's mind suffered from separation—he had delusions about his food being poisoned, &c. 254/15, J. R. A very incorrigible person, suicidal and violent, mind and body injured by her bad conduct in as well as out of Prison. 360/18, B. M. This man was congenitally weak-minded, and became much worse in separation—giving way to delusions about officers injuring him by putting stuffs in his food. 356/18, A. W. Of violent temper, stabbed herself with a pair of scissors in the neck—suicidal. 90/18, A. B. or G. Congenitally weak-minded—on admission reported to have threatened suicide under an attack of *delirium tremens*—she is improved every way. 117/18, G. B. This Prisoner's mind gave way under separation to various absurd ideas, but recovered greatly by association. 105/19, R. W. This Prisoner is here, for the second time, reported epileptic. He now declares solemnly that he pretended epilepsy. 158/18, N. L. Congenitally weak-minded—he became worse in separation, and improved by association. 147/19, A. B. This girl was here formerly an imbecile, violent at times—her father is insane. 145/19, A. C. or T. On admission, certified to have been repeatedly insane—she is not fit to bear separation. 149/19, B. K. Suicidal, and suffering remorse for having murdered her child. 269/19, M. A. M'E. or R. An imprisonment Prisoner, sentenced to two years' confinement, had delusions about hearing voices speaking ill of her—jealous and suspicious in temper. 47/19, D. G. On the 10th July 1860 became insane, and was removed to Lunatic Department. He is incoherent, and has delusions of various kinds. 115/18, S. S. This Prisoner's mind suffered from separation—he became suspicious of his food, and thought the officials spoke evil of him. He received Her Majesty's free pardon, medical certificates having been given setting forth the opinion that S. S. might probably improve by being restored to his family and friends. 273/18, H. M. This young lad's mind gave way in separation—he thought he heard voices crying and swearing at him. 42/19, J. B. This lad's mind congenitally weak, got worse in separation—he believed persons entered his cell by night and seized him; has a sister who was in an asylum. 474/18, M. P. or M'N. This woman became stupid, and could not bear the discipline of separation. She is still the same. 95/18, P. M'G. Congenitally weak-minded, became weaker. 28/19, J. H. Became weak-minded under separation, sullen and suspicious of his food, but after being associated he became better. 235/19, S. D. or M. D. On admission, reported suicidal from mental depression. He is better. 191/19, T. C. Congenitally weak-minded, was insane, and although removed is not fit for separation. 501/18, T. M'G. Became weak-minded in separation, was irritable and suspicious of his food. He is improved. 66/19, A. M'Q. Congenitally weak-minded, got worse here, became sleepless, alarmed, thought she saw ghosts by night in her cell. She is better. 167/19, E. S. Was found suspended in cell, suffers from depression of mind. 11/19, J. M. Congenitally weak-minded, became worse, childish. 458/18, M. W. Seems worn-out in mind and body, has suffered by Syphilis and vicious habits of life.

General Prison, Perth, 2d January 1861.

J. B. Thomson, *Resident Surgeon.*

No. XIV.

ABSTRACT of half year's Returns made by the Chief Officers of the General Prison at Perth, down to the end of the year 1860, relating to 542 Juvenile Male Prisoners, who were associated in the Juvenile Department liberated between 1st January 1848 and 31st December 1859.

		Whether Employment for Prisoner was obtained at date of, or shortly after, liberation.					Whether Employed at date of respective Returns.					Conduct of Prisoner since liberation so far as ascertained at date of respective Returns.						
	Number liberated.	Yes.	No.	Not known	Dead.	Total.	Yes.	No.	Not known	Dead.	Total.	Good.	Tolerable.	Not known	Bad.	Returned to Crime or under Sentence.	Dead.	Total.
Results of first Return after liberation, ...	542	273	206	59	4	542	208	248	81	5	542	261	40	94	53	89	5	542
Results of second Return, at the lapse of half a year from the first, ...	...	...	...	...	...	...	210	256	66	10	542	180	54	74	44	181	9	542
Results of third Return at the lapse of a year from the first, ...	...	...	...	...	...	...	207	262	61	12	542	164	49	63	54	200	12	542

No. XV.

TABLE showing the number of Prisoners, including One Hundred and Sixty-seven Female Convicts sentenced to Transportation or Penal Servitude, received into the General Prison at Perth, from each County in Scotland, in the year ended 31st December 1860.

	M.	F.
Aberdeen, . . .	18	10
Argyle, ...	3	1
Ayr, ...	6	2
Banff, ...	2	1
Berwick, ...	...	...
Bute, ...	...	...
Caithness, . . .	1	...
Clackmannan . .	...	...
Dumbarton, . . .	2	1
Dumfries, . . .	5	...
Edinburgh, . . .	41	39
Elgin, ...	3	2
Fife, ...	2	2
Carry forward,	83	58

	M.	F.
Brought forward,	83	58
Forfar, ...	9	15
Haddington, . .	1	...
Inverness, . . .	5	2
Kincardine, . . .	1	...
Kinross, ...	...	...
Kirkcudbright, . .	1	...
Lanark, ...	56	54
Linlithgow, . . .	2	...
Nairn, ...	...	...
Orkney, ...	3	...
Peebles, ...	2	1
Perth, ...	9	1
Carry forward,	172	131

	M.	F.
Brought forward,	172	131
Renfrew, ...	15	5
Ross & Cromarty, .	...	2
Roxburgh, . . .	2	1
Selkirk, ...	...	...
Stirling, ...	5	1
Sutherland, . . .	...	...
Wigton, ...	2	1
Zetland, ...	1	...
	197	141
TOTAL,	338	

No. XVI.—Table of the whole Establishment of Officers in the General Prison at Perth, with their various Salaries and Allowances at 31st December 1860.

No.	NAME.	OFFICE.	Age.	Married or Single. M.	Married or Single. S.	Commencement of Appointment.	Salaries and Allowances. Weekly Wages of Subordinate Officers. £ s. d.	Other Allowances, including House-Room, Light, &c.	Total Amount of Officers' Salaries and Wages per ann. £ s. d.
	Department for Males.								
1	James Stuart,	Governor,	..	1	..	8th December 1842,	0 0 0	House, Garden, and Gas,	500 0 0
2	William Brown,	Chaplain,	..	..	1	8th February 1845,	0 0 0	Ditto,	300 0 0
3	Vacant,	Visiting Physician,	..	..	..	....	0 0 0	None,	200 0 0
4	James Bruce Thomson,	Resident Surgeon,	..	1	..	1st April 1858,	0 0 0	House and Gas,	300 0 0
5	William M'Donald,	Steward and Superintendent of Manufactures.	..	1	..	1st August 1859,	0 0 0	Ditto,	200 0 0
6	Alexander Stuart,	First Clerk,	..	..	1	1st August 1859,	0 0 0	None,	120 0 0
7	Alexander Ross,	Second Clerk,	..	..	1	1st August 1859,	0 0 0	None,	100 0 0
8	John Baird,	Clerk in Steward's department,	..	1	..	1st January 1860,	0 0 0	House and Gas,	85 0 0
9	Samuel Brownsmith,	Clerk in do. do.	..	1	..	1st August 1859,	0 0 0	Ditto,	80 0 0
10	John Anderson,	Head Warder,	47	1	..	1st January 1860,	1 10 0	House, Gas, and Uniform,	78 4 3
11	James Ross,	Trades' Warder,	48	1	..	23d March 1842,	1 3 0	Ditto,	59 19 3
12	Donald Forbes,	Ditto,	56	1	..	1st August 1855,	1 1 0	Ditto,	54 15 0
13	Peter Paterson,	Weaver Warder,	55	1	..	11th November 1843,	0 18 0	Ditto,	46 18 6
14	Charles Galletly,	Assistant Tailor Warder,	43	1	..	20th August 1855,	0 18 0	Ditto,	46 18 6
15	Allan M'Gregor,	Cook Warder,	43	1	..	28th October 1847,	0 18 0	Ditto,	46 18 6
16	Archibald Stewart,	Outside Night Warder,	48	..	1	23d March 1842,	0 17 0	Ditto,	44 6 6
17	John Leslie,	Ditto,	35	1	..	12th February 1860,	0 15 6	Ditto,	40 8 2
18	John M'Intyre,	Warder,	25	1	..	10th December 1859,	0 17 0	Ditto,	44 6 6
19	William M'Isaac,	Ditto,	27	1	..	18th September 1859,	0 16 0	Ditto,	41 14 3
20	James Henderson,	Exercising Warder,	39	1	..	12th August 1854,	0 16 0	Ditto,	41 14 3
21	Robert Miller,	Ditto,	65	1	..	23d March 1842,	0 16 0	Ditto,	41 14 3
22	James Geekie,	Furnace Warder,	32	1	..	20th June 1854,	0 17 0	Ditto,	44 6 6
23	James Deuchar,	Assistant Weaver Warder,	45	1	..	13th November 1851,	0 17 0	Uniform,	44 6 6
24	James Robertson,	Warder,	35	..	1	27th August 1850,	0 17 0	Ditto,	44 6 6
25	John Halley,	Ditto,	36	1	..	6th December 1857,	0 17 0	Ditto,	44 6 6
26	Walter M'Gregor,	Door Warder,	38	..	1	18th February 1852,	0 17 0	Ditto,	44 6 6
27	Andrew Morris,	Inside Night Warder,	25	..	1	18th September 1859,	0 17 0	Ditto,	44 6 6
28	David Lockhart,	Ditto,	39	1	..	29th December 1852,	0 15 6	House, Gas, and Uniform,	40 8 2
29	John Duff,	Warder,	34	1	..	3d December 1855,	0 16 0	Ditto,	41 14 3
30	Alexander Webster,	Ditto,	44	1	..	4th September 1844,	0 15 6	Ditto,	40 8 2
31	Henry Talbot,	Gate Warder,	58	1	..	30th October 1844,	0 15 6	Ditto,	40 8 2
32	Alexander Larg,	Waterhouse Warder, and Precentor in Prison.	42	1	..	7th September 1844,	{0 15 6 / 0 2 0}	Ditto,	45 12 2
33	Robert Taylor,	Warder,	33	1	..	18th February 1860,	0 17 0	Uniform,	44 6 6
34	Daniel Cameron,	Assistant Shoemaker Warder,	25	..	1	3d June 1858,	0 16 0	House, Gas, and Uniform,	41 14 3
35	William Sievewright,	Scripture Reader,	37	1	..	1st January 1860,	0 0 0	None,	100 0 0
36	James Baxter,	Teacher,	42	1	..	2d September 1844,	1 6 10½	None,*	70 0 0
37	John Duncan,	Ditto,	39	1	..	27th April 1849,	1 4 11½	None,	65 0 0
38	James M'Laurin,	Ditto,	59	..	1	4th June 1849,	1 4 11½	None,	65 0 0
39	William Ferguson,	Ditto, and Teacher of Music to Female Convicts.	49	1	..	15th October 1849,	{1 4 11½ / 0 2 3½}	None,	71 0 0
40	James Kerr,	Ditto,	37	1	..	11th March 1854,	1 4 11½	None,	65 0 0
41	James Mason,	Labourer in Store,	26	1	..	16th February 1860,	0 14 0	None,	36 10 0
									3505 18 7
	Department for Females.								
42	Janet Beattie,	Matron,	..	..	1	1st July 1857,	0 0 0	Furnished House, Garden, & Gas,	200 0 0
43	Jane Wright,	Sub-Matron,	34	..	1	3d October 1857,	0 0 0	Furnished House and Gas,	100 0 0
44	Janet M'Intyre,	Superintendent of Asso. Convicts,	34	..	1	22d December 1856,	1 1 0	Furnished Lodgings and Gas,	54 15 0
45	Mary Moir,	Assistant ditto,	40	..	1	18th September 1859,	0 14 0	Furnished Lodgings, Gas, & Dress,	36 10 0
46	Catherine Stewart,	Warder,	27	..	1	17th July 1855,	0 12 6	Ditto,	32 11 9
47	Ann Barlas,	Ditto,	36	..	1	14th August 1855,	0 12 6	Ditto,	32 11 9
48	Jessie Brough,	Ditto,	32	..	1	25th March 1860,	0 12 6	Ditto,	32 11 9
49	Elizabeth Todd,	Ditto,	22	..	1	3d June 1860,	0 12 6	Ditto,	32 11 9
50	Mary M'Kinlay,	Ditto,	31	..	1	20th April 1856,	0 12 6	Ditto,	32 11 9
51	Jane Campsie,	Ditto,	24	..	1	22d August 1858,	0 12 6	Ditto,	32 11 9
52	Margaret Campbell,	Ditto,	27	..	1	13th November 1858,	0 12 6	Ditto,	32 11 9
53	Ann Constable,	Ditto,	21	..	1	8th January 1859,	0 12 6	Ditto,	32 11 9
54	Janet M'Caul,	Ditto,	22	..	1	6th February 1859,	0 12 6	Ditto,	32 11 9
55	Jessie Galletly,	Ditto,	28	..	1	30th April 1859,	0 12 6	Ditto,	32 11 9
56	Jane Brown,	Ditto,	31	..	1	25th June 1859,	0 12 6	Ditto,	32 11 9
57	Janet Reid,	Ditto,	30	..	1	25th June 1859,	0 12 6	Ditto,	32 11 9
58	Helen Wilson,	Ditto,	26	..	1	6th May 1860,	0 12 6	Ditto,	32 11 9
59	Elizabeth Campbell,	Ditto,	25	..	1	18th September 1859,	0 12 6	Ditto,	32 11 9
60	Marion Brown,	Ditto,	23	..	1	18th September 1859,	0 12 6	Ditto,	32 11 9
61	Helen Walch,	Ditto,	24	..	1	18th September 1859,	0 12 6	Ditto,	32 11 9
62	Isabella Elder,	Ditto,	28	..	1	3d June 1860,	0 12 6	Ditto,	32 11 9
63	Jane M'Lagan,	Ditto,	24	..	1	26th August 1860,	0 12 6	Ditto,	32 11 9
64	Mary Cross,	Ditto,	24	..	1	8th April 1860,	0 12 6	Ditto,	32 11 9
65	Janet Duncan,	Exercising Warder,	36	..	1	6th September 1855,	0 12 6	Ditto,	32 11 9
66	Jane Wood,	Gate Warder,	42	..	1	28th September 1855,	0 12 6	Ditto,	32 11 9
67	Margaret Sharp,	Laundry Warder,	34	..	1	25th July 1855,	0 12 6	Ditto,	32 11 9
68	Flora Yule,	Night Warder,	26	..	1	25th March 1860,	0 12 6	Ditto,	32 11 9
69	Jessie Ogilvie,	Sick Nurse,	28	..	1	23d September 1859,	0 15 0	Ditto,	39 2 2
70	Ann Craigie,	Housekeeper to Female Warders,	33	..	1	28th September 1858,	0 14 0	Ditto,	36 10 0
71	Jane M. Gregor,	Scripture Reader,	44	..	1	1st August 1859,	0 0 0	None,	80 0 0
72	Ann Hislop,	Ditto,	38	..	1	1st November 1859,	0 0 0	None,	80 0 0
73	Catherine M'Donald,	Teacher,	30	..	1	21st July 1855,	1 0 0	None,	52 2 10
74	Mary Moncur,	Ditto,	44	..	1	24th July 1855,	1 0 0	None,	52 2 10
75	Alice Brownsmith,	Ditto,	26	..	1	10th September 1855,	1 0 0	None,	52 2 10
76	Grace Grimmond,	Ditto,	37	..	1	7th September 1858,	1 0 0	None,	52 2 10
77	Elizabeth M'Pherson,	Ditto,	25	..	1	2d October 1859,	1 0 0	None,	52 2 10
78	Margaret Archer,	Ditto,	38	..	1	2d October 1859,	1 0 0	None,	52 2 10
79	Ellen Mackintosh,	Ditto,	40	..	1	2d October 1859,	1 0 0	None,	52 2 10
80	Christian M'Gregor,	Outer Gate Warder,	45	1	..	13th February 1848,	0 3 6	None (Warder's Wife),	9 2 6
									1750 9 9
	Prisons for Juveniles and Imbeciles.								
81	Peter Patillo,	Warder,	26	..	1	18th May 1856,	0 17 0	Uniform,	44 6 6
82	John Bruce,	Ditto,	35	1	..	20th November 1853,	0 16 6	Ditto, sleeps in Prison,	43 0 0
83	John Houston,	Inside Night Warder,	41	1	..	27th April 1858,	0 15 6	Ditto,	40 8 2
									127 14 8
	Wing for Criminal Lunatics								
84	Hugh Galloway,	Warder,	31	1	..	14th May 1860,	0 18 0	House, Fuel, Gas, and Uniform,	46 18 6
85	Henry Brown,	Assistant Warder,	40	1	..	29th December 1852,	0 15 6	Ditto,	40 8 2
86	Peter Laing,	Ditto,	33	1	..	27th March 1858,	0 15 6	Uniform,	40 8 2
87	John Hepburn,	Ditto,	27	..	1	27th April 1858,	0 15 6	House, Fuel, Gas, and Uniform,	40 8 2
88	James Kenna,	Ditto,	46	1	..	3d December 1858,	0 15 6	Uniform,	40 8 2
89	Alexander Ross,	Inside Night Warder,	40	1	..	2d December 1859,	0 15 6	Ditto,	40 8 2
90	Margaret Galloway,	Female Warder,	43	1	..	14th May 1860,	0 12 6	Dress (Warder's Wife),	32 11 9
91	Sophia Dickson,	Assistant,	19	..	1	23d July 1860,	0 5 0	None,	13 0 0
									294 11 1
								Total,	5678 14 1

* Teachers' Salaries begin at £60 per annum, with an increase of £5 every four years, until it amounts to £80.

General Prison, Perth, 5th January 1861.

Ja. Stuart, *Gov.*

No. XVII.—TABLE of the whole Assessments imposed under the Acts of 2d and 3d Vict. c. 42, 7th and 8th Vict. c. 34, and 14 and 15 Vict. c. 27, in the Year 1860, on the several Counties in Scotland and Burghs situated therein, for the purposes of the Prisons' Acts; and Apportionments of such Assessments among the several Landward parts of Counties and Burghs.

Counties, and Royal and Parliamentary Burghs situated therein.	Population, Census 1851, according to which the Assessments have been apportioned.	Assessment of £4889, 0s. 5d., for Building, Altering, and Repairing Local Prisons, under § 36 of the Original Act, and Apportionment thereof.	Additions to Assessment for Building, &c., Local Prisons, and Apportionment thereof.	Assessments fixed and determined by County Prison Boards for Current Expenses under § 38 of the Original Act, and Apportionment thereof.
		£ s. d.	£ s. d.	£ s. d.
1. Aberdeen—				
Landward part, ...	130,021	...	...	981 2 10
Aberdeen, ...	71,973	...	...	543 2 3
Peterhead, ...	7,298	...	...	55 1 5
Inverury, ...	2,264	...	...	17 1 8
Kintore, ...	476	...	...	3 11 10
	212,032	...	...	1600 0 0
2. Argyle—				
Landward part, ...	79,612	...	...	534 18 4
Campbeltown, ...	6,880	...	...	7 3 0
Inveraray, ...	1,064	...	...	46 4 7
Oban, ...	1,742	...	...	11 14 1
	89,298	...	...	600 0 0
3. Ayr—				
Landward part, ...	143,257	348 9 6	...	1123 7 0
Ayr, ...	13,632	33 3 2	...	106 17 11
Irvine, ...	5,144	12 10 3	...	40 6 9
Kilmarnock, ...	16,504	40 2 11	...	129 8 4
	178,537	434 5 10	...	1400 0 0
4. Banff—				
Landward part, ...	46,474	...	...	171 11 7
Banff, ...	6,000	...	...	22 3 1
Cullen, ...	1,697	...	...	6 5 4
	54,171	...	...	200 0 0
5. Berwick—				
Landward part, ...	35,192	...	...	380 18 5
Lauder, ...	1,105	...	...	11 19 3
	36,297	...	...	392 17 8
6. Bute—				
Landward part, ...	9,504	27 8 5	...	97 17 1
Rothesay, ...	7,104	20 9 11	...	73 2 11
	16,608	47 18 4	...	171 0 0
7. Caithness—				
Landward part, ...	31,987	...	...	...
Wick, ...	6,722	...	...	...
	38,709	...	...	...
8. Clackmannan—				
Landward part, ...	22,951	...	...	400 0 0
	22,951	...	...	400 0 0

Counties, and Royal and Parliamentary Burghs situated therein.	Population, Census 1851, according to which the Assessments have been apportioned.	Assessment of £4889, 0s. 5d., for Building, Altering, and Repairing Local Prisons, under § 36 of the Original Act, and Apportionment thereof.	Additions to Assessment for Building, &c., Local Prisons, and Apportionment thereof.	Assessments fixed and determined by County Prison Boards for Current Expenses under § 38 of the Original Act, and Apportionment thereof.
		£ s. d.	£ s. d.	£ s. d.
16. Inverness—				
Landward part, ...	83,707	...	...	654 5 9
Inverness, ...	12,793	...	...	99 19 11
	96,500	...	...	754 5 8
17. Kincardine—				
Landward part, ...	33,664	...	...	194 12 0
Inverbervie, ...	934	...	...	5 8 0
	34,598	...	...	200 0 0
18. Kinross—				
Landward part, ...	8,924	...	...	100 0 0
	8,924	...	...	100 0 0
19. Kirkcudbright,—				
Landward part, ...	39,987	134 4 3	...	278 3 11
Kirkcudbright, ...	2,687	9 0 4	...	18 13 10
New Galloway, ...	447	1 10 0	...	3 2 3
	43,121	144 14 7	...	300 0 0
20. Lanark—				
Landward part, ...	165,485	419 16 9	...	2,778 0 4
Airdrie, ...	14,435	36 12 5	...	242 6 5
Glasgow, ...	329,097	834 18 5	...	5,524 11 7
Hamilton, ...	9,680	24 8 8	...	161 13 2
Lanark, ...	5,008	12 14 1	...	84 1 7
Rutherglen, ...	6,514	16 10 6	...	109 6 11
	530,169	1,345 0 10	...	8,900 0 0
21. Linlithgow—				
Landward part, ...	26,335	...	...	262 3 5
Linlithgow, ...	3,018	...	...	30 0 10
Queensferry, ...	782	...	...	7 15 9
	30,135	...	...	300 0 0
22. Nairn—				
Landward part, ...	6,979	...	...	77 2 2
Nairn, ...	2,977	...	...	32 17 10
	9,956	...	...	110 0 0
23. Orkney—				
Landward part, ...	28,004	78 16 8	...	160 5 0
Kirkwall, ...	3,451	9 14 3	...	19 15 0
	31,455	88 10 11	...	180 0 0

		£ s. d.	£ s. d.	£ s. d.
9. Dumbarton—				
Landward part, ...	39,658	...	...	409 14 10
Dumbarton, ...	5,445	...	...	56 5 2
	45,103	...	...	466 0 0
10. Dumfries—				
Landward part, ...	61,871	...	...	356 7 9
Annan, ...	3,426	...	...	19 14 8
Dumfries, ...	9,353	...	...	53 17 5
Lochmaben, ...	1,092	...	...	6 5 10
Sanquhar, ...	2,381	...	...	13 14 4
	78,123	...	...	450 0 0
11. Edinburgh—				
Landward part, ...	57,625	328 13 7	...	1,168 18 10
Edinburgh, ...	160,302	914 6 7	...	3,251 15 6
Leith, ...	30,919	176 7 1	...	627 4 1
Musselburgh, ...	4,000	22 16 4	...	81 2 10
Portobello, ...	3,497	19 18 11	...	70 18 9
	256,343	1,462 2 6	...	5,200 0 0
12. Elgin—				
Landward part, ...	29,154	79 4 11	...	194 11 3
Elgin, ...	6,337	17 4 6	...	42 5 10
Forres, ...	3,468	9 8 6	...	23 2 11
	38,959	105 17 11	...	260 0 0
13. Fife—				
Landward part, ...	93,116	...	...	636 15 2
Anstruther Easter, ...	1,161	...	...	7 18 9
Anstruther Wester, ...	365	...	...	2 9 11
Auchtermuchty, ...	1,504	...	...	10 5 8
Burntisland, ...	2,724	...	...	18 12 7
Crail, ...	1,247	...	...	8 10 6
Cupar, ...	5,686	...	...	38 17 8
Dunfermline, ...	13,836	...	...	94 12 4
Dysart, ...	8,041	...	...	54 19 9
Earlsferry, ...	436	...	...	2 19 8
Falkland, ...	1,330	...	...	9 1 11
Inverkeithing, ...	1,000	...	...	6 16 9
Kilrenny, ...	1,862	...	...	12 14 8
Kinghorn, ...	1,568	...	...	10 14 5
Kirkcaldy, ...	10,475	...	...	71 12 8
Newburgh, ...	2,638	...	...	18 0 9
Pittenweem, ...	1,450	...	...	9 18 4
St. Andrews, ...	5,107	...	...	34 18 6
	153,546	...	...	1,050 0 0
14. Forfar—				
Landward part, ...	64,161	...	...	603 16 6
Arbroath, ...	16,986	...	...	159 17 2
Brechin, ...	6,637	...	...	62 9 3
Dundee, ...	78,931	...	...	742 16 6
Forfar, ...	9,311	...	...	87 12 6
Montrose, ...	15,238	...	...	143 8 1
	191,264	...	...	1,800 0 0
15. Haddington, ...				
Landward part, ...	28,602	...	...	393 0 9
Dunbar, ...	3,038	...	...	41 15 0
Haddington, ...	3,883	...	...	53 7 1
North Berwick, ...	863	...	...	11 17 2
	36,386	...	...	500 0 0
24. Peebles—				
Landward part, ...	8,756	28 18 3	...	...
Peebles, ...	1,982	6 10 11	...	...
	10,738	35 9 2	...	...
25. Perth—				
Landward part, ...	114,220	...	...	658 19 10
Culross, ...	605	...	...	3 9 10
Perth, ...	23,835	...	...	137 10 4
	138,660	...	...	800 0 0
26. Renfrew—				
Landward part, ...	66,487	232 6 2	288 8 6	536 11 0
Greenock, ...	36,689	128 3 10	159 3 2	296 1 7
Paisley, ...	47,952	167 10 11	208 0 5	386 19 6
Port-Glasgow, ...	6,986	24 8 2	30 6 1	56 7 6
Renfrew, ...	2,977	10 8 0	12 18 4	24 0 5
	161,091	562 17 1	698 16 6	1,300 0 0
27. Ross & Cromarty—				
Landward part, ...	75,532	231 2 11	...	730 11 10
Cromarty, ...	1,988	6 1 8	...	19 4 8
Dingwall, ...	1,990	6 1 10	...	19 5 0
Fortrose, ...	1,148	3 10 3	...	11 2 2
Tain, ...	2,049	6 5 5	...	19 16 4
	82,707	253 2 1	...	800 0 0
28. Roxburgh—				
Landward part, ...	48,027	...	...	585 18 0
Jedburgh, ...	3,615	...	...	44 2 0
	51,642	...	...	630 0 0
29. Selkirk—				
Landward part, ...	6,495	...	...	79 9 4
Selkirk, ...	3,314	...	...	40 10 8
	9,809	...	...	120 0 0
30. Stirling—				
Landward part, ...	64,648	249 9 4	...	599 14 7
Stirling, ...	12,837	49 10 9	...	119 1 8
Falkirk, ...	8,752	33 15 4	...	81 3 9
	86,237	332 15 5	...	800 0 0
31. Sutherland—				
Landward part, ...	25,194	...	...	180 14 0
Dornoch, ...	599	...	...	4 6 0
	25,793	...	...	185 0 0
32. Wigtown—				
Landward part, ...	33,878	...	...	312 6 5
Stranraer, ...	5,738	...	...	52 18 0
Whithorn, ...	1,652	...	...	15 4 6
Wigtown, ...	2,121	...	...	19 11 1
	43,389	...	...	400 0 0
33. Zetland—				
Landward part, ...	31,078	76 5 9	...	150 0 0
	31,078	76 5 9	...	150 0 0
Total, ...	...	4,889 0 5	698 16 6	30,519 3 4

Note.—No Report has been received from the Prison Board of Caithness-shire, and the Prison Board of Peeblesshire reported that no Assessment for current expenses for the year 1860 was necessary in respect of the balance in hand.

No. XVIII.—Tables containing Classified Statements of the Current Expenses of the several Prisons in Scotland, for the Year ended on 30th June 1860.

1. Abstract of Returns of Expenditure under the Prison Boards of the several Counties, chargeable on the General Fund for Current Annual Expenses, for the Year ended 30th June 1860.

Counties.	Names of Prisons.	Expenditure for the Year ended 30th June 1860. For Prisons.	For Insane Prisoners boarded out.	For Prisoners from this County in Prisons of other Counties.	For General Management.	For Retired Allowances.	For Interest.	Total Expenditure.
1	2	3	4	5	6	7	8	9
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Aberdeen	Aberdeen	1,640 0 2[6]						
	Peterhead	117 6 8[6]						
	Huntly	32 1 10	...	...	133 4 11	123 4 0	23 18 1	2,098 8 9
	Fraserburgh	28 13 0						
2. Argyle	Inveraray	262 9 7						
	Campbeltown	243 2 0						
	Lochgilphead	62 2 3	...	...	100 2 10	30 0 0	...	744 16 6
	Tobermory	46 19 10						
3. Ayr	Ayr	1,210 13 6						
	Kilmarnock	318 7 10	...	...	79 11 0	...	...	1,608 12 4
4. Banff	Banff	295 2 8						
	Cullen	13 2 11	...	...	47 1 6	...	...	373 1 3
	Keith	17 14 2						
5. Berwick	Greenlaw	255 18 3[6]						
	Dunse	42 16 2	...	...	38 0 3[6]	...	...	339 5 3
	Earlston	2 10 6						
6. Bute	Rothesay	184 19 8						
	Lamlash	15 0 0	...	...	15 0 0	25 0 0	...	239 19 8
7. Caithness	Wick	209 9 6[9]	...	...	25 0 0	...	...	234 9[9] 6[9]
8. Clackmannan	Alloa	361 4 5[6]	...	...	40 17 3	...	1 19 0	404 0 8[6]
9. Dumbarton	Dumbarton	369 15 11						
	Kirkintilloch	41 6 1	...	...	32 0 0	...	. .	483 6 4
	Helensburgh	40 4 4						
10. Dumfries	Dumfries	485 16 9	...	...	46 13 6	...	...	532 10 3
11. Edinburgh	Edinburgh	6,221 7 1[6]						
	Edinburgh Court Buildings' Prison	170 5 10[6]	...	...	367 2 6	207 10 0	25 12 11	7,056 15 5[6]
	Canongate	0 10 3[6]						
	Musselburgh	64 6 9						
12. Elgin	Elgin	319 0 3						
	Forres	15 0 0	...	0 7 0	24 1 2	...	1 9 10	359 18 3
13. Fife	Cupar	661 2 7						
	Dunfermline	388 14 9	...	0 14 1	85 3 11	10 0 0	12 8 10	1,158 4 2
14. Forfar	Arbroath	153 8 5						
	Brechin	67 8 11						
	Dundee	1,527 18 10	16 11 9	5 1 3	139 1 6	...	...	2,574 13 11[6]
	Forfar	409 14 11						
	Montrose	255 8 4[6]						
15. Haddington	Haddington	387 3 6						
	Dunbar	28 18 8	...	...	35 11 9	10 0 0	...	461 13 11
16. Inverness	Inverness	637 9 8[6]						
	Fort-William	126 5 5[6]						
	Lochmaddy	102 6 11	...	...	56 9 8	...	...	1,023 2 6[6]
	Portree	100 10 9[6]						
17. Kincardine	Stonehaven	192 8 7	...	1 5 0	26 8 0	. .	...	220 1 7
18. Kinross	Kinross	139 1 4	...	...	15 0 0	...	...	154 1 4
19. Kirkcudbright	Kirkcudbright	302 6 3						
	Maxwelltown	46 6 9	...	...	31 17 6	...	...	380 10 6
	Carry forward,	18,614 3 3[3]	16 11 9	7 7 4	1,338 7 3[6]	405 14 0	65 8 8	20,447 12 3[9]

1. ABSTRACT of Returns of Expenditure under the Prison Boards of the several Counties in Scotland, &c.—*continued.* (No. XVIII *Continued.*)

COUNTIES.	NAMES OF PRISONS.	Expenditure for the Year ended 30th June 1860. For Prisons.	For Insane Prisoners boarded out.	For Prisoners from this County in Prisons of other Counties.	For General Management.	For Retired Allowances.	For Interest.	Total Expenditure.
1	2	3	4	5	6	7	8	9
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	Brought forward,	18,614 3 3[3]	16 11 9	7 7 4	1,338 7 3[6]	405 14 0	65 8 8	20,447 12 8
20. Lanark	Glasgow	8,875 3 6						
	Airdrie	774 15 11[6]						
	Hamilton	675 4 8[6]	...	3 11 8	644 15 0*	58 5 0	97 15 1	11,459 18 1
	Lanark	330 7 2						
21. Linlithgow	Linlithgow	390 13 4	...	4 0 0	43 1 5	...	...	437 14 9
22. Nairn	Nairn	119 7 11[6]	...	...	15 12 9	...	...	135 0 8
23. Orkney	Kirkwall	127 18 11	...	...	38 7 11	5 0 0	...	171 6 10
24. Peebles	Peebles	153 7 4[9]	...	...	26 17 10	...	...	180 5 2
25. Perth	Perth	982 9 3[9]	...	...	62 2 0	...	...	1,194 7 1
	Dunblane	149 15 9[6]						
26. Renfrew	Paisley	1,363 0 6						
	Greenock	506 8 4	...	...	146 10 2	...	...	2,084 17 4
	Pollockshaws	68 18 4						
27. Ross and Cromarty	Dingwall	286 4 8						
	Tain	95 6 5[6]	...	0 3 0	119 15 2[6]	...	27 16 5	693 6 8
	Cromarty	63 2 9						
	Stornoway	100 18 2						
28. Roxburgh	Jedburgh	561 14 5						
	Hawick	30 19 11	...	4 10 3	56 8 5	13 5 0	7 1 6	713 13 6
	Kelso	39 14 0						
29. Selkirk	Selkirk	136 15 9[3]	...	...	31 1 10	...	...	167 17 7
30. Stirling	Stirling	1,144 10 8[6]	...	5 18 11	55 15 0	7 10 0	...	1,278 11 11
	Falkirk	64 17 3[6]						
31. Sutherland	Dornoch	167 9 10[6]	...	...	24 2 6	14 0 0	0 9 0	206 1 4
32. Wigtown	Wigtown	197 1 4[1/8]	...	...	57 19 0[6]	...	...	470 6 0[5/8]
	Stranraer	215 5 8						
33. Zetland	Fort-Charlotte	129 19 8[6]	...	...	18 1 1	...	...	148 0 9
	Total,	36,365 15 2[5/8]	16 11 9	25 11 2	2,678 17 5[6]	503 14 0	198 10 8	39,789 0 3[1/8]

* This sum of £644, 15s. includes £355, being the Salary of the County Board's Architect for 5 years and 11 months.

2. CLASSIFICATION of the Current Expenditure (exclusive of Labour Account) in each Prison in Scotland, for the Year ended 30th June 1860.

COUNTIES.	PRISONS.	Salaries and Wages.	Furniture, Fittings, and Utensils.	Prison Diet.	Contingent Alimentary Charges.	Clothing.	Bedding.	Lighting.	Fuel.	General Contingent Charges, including ordinary Current Repairs not Charged against the Building Fund.	TOTAL.
1	2	3	4	5	6	7	8	9	10	11	12
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Aberdeen	Aberdeen	905 7 0	8 18 11	319 18 6[6]	11 11 7	58 12 11	9 3 5	50 7 6	108 16 7	167 3 9	1,640 0 2[6]
	Peterhead	55 0 0	0 19 4	10 8 9	...	5 10 4[6]	...	4 11 8	19 16 4	21 0 3	117 6 8[6]
	Huntly	15 3 0	0 10 2	3 6 8	...	...	...	1 5 11	8 11 2	3 4 11	32 1 10
	Fraserburgh	14 2 0	1 10 0	3 13 0	...	...	...	1 0 6	4 18 6	3 0	28 13 0
2. Argyle	Inveraray	153 4 0	...	47 12 11	0 5 11	9 0 0	2 14 0	15 3 1	20 4 6	14 5 2	262 9 7
	Campbeltown	127 9 0	10 8 1	52 0 1	5 10 9	5 0 0	3 0 0	7 17 4	27 5 3	4 11 6	243 2 0
	Lochgilphead	43 3 0	...	3 16 7	...	...	...	3 1 4	9 0 0	3 1 4	62 2 3
	Tobermory	33 0 0	0 2 6	1 16 0	1 15 0	0 13 0	0 5 6	0 18 10	8 5 0	0 4 0	46 19 10
3. Ayr	Ayr	691 5 4	1 7 0	274 11 8	...	11 10 7	1 5 4	39 6 6	63 2 5	128 4 8	1,210 13 6
	Kilmarnock	172 8 0	2 7 5	73 2 3	1 6 11	7 7 5	0 15 7	9 7 1	14 19 1	36 14 1	318 7 10
4. Banff	Banff	103 8 0	4 19 11	82 19 9[6]	1 2 3	15 7 10	2 3 10	9 8 7	26 12 6	48 19 11[6]	295 2 8
	Cullen	11 2 0	...	0 14 0	0 1 5	...	...	...	1 0 0	0 5 6	13 2 11
	Keith	11 2 0	0 5 9	0 7 10	...	...	0 14 9	...	2 7 1[6]	2 16 8[6]	17 14 2
5. Berwick	Greenlaw	158 4 0	...	35 16 2[6]	0 4 0	10 16 0	4 11 4[6]	5 1 10	25 3 8[6]	16 1 1[6]	255 18 3[6]
	Dunse	9 4 0	...	16 18 4[6]	0 3 0	...	...	1 15 7	5 10 6	9 4 8[6]	42 16 2
	Earlstown	...	...	...	...	...	...	...	...	2 10 6	2 10 6
6. Bute	Rothesay	71 15 0	11 11 5	46 17 10	8 1 9	5 5 7	1 13 0	5 18 11	15 19 6	17 16 8	184 19 8
	Lamlash	15 0 0	...	...	...	...	...	...	...	...	15 0 0
7. Caithness	Wick	116 3 0	4 13 1[6]	40 12 4[0]	...	6 3 3[6]	4 18 6	8 19 9	17 6 5	10 13 1	209 9 6[0]
8. Clackmannan	Alloa	189 6 0	2 7 10	55 0 5[6]	2 9 2	15 9 6	6 5 1	15 5 5	21 13 10[6]	53 7 1[6]	361 4 5[6]
9. Dumbarton	Dumbarton	221 12 0	4 10 0	88 10 2	3 5 0	14 12 0	3 5 0	10 9 7	20 4 2	3 8 0	369 15 11
	Kirkintilloch	19 14 6	1 16 8	7 16 10	...	0 18 3	...	2 2 0	3 18 10	4 19 0	41 6 1
	Helensburgh	18 14 6	3 10 9	6 1 10	0 2 10	5 4 3	...	2 8 4	2 7 6	1 14 4	40 4 4
10. Dumfries	Dumfries	299 8 0	7 7 10	96 12 4	2 6 2	7 16 11	2 9 0	21 3 0	31 17 6	16 16 0	485 16 9
11. Edinburgh	Edinburgh	2380 1 2	184 13 10	1,358 18 5	62 9 8	784 5 10[6]	...	166 11 8	298 13 1	985 13 5	6,221 7 1[6]
	Edinburgh Court Buildings' Prison	86 5 5	1 14 0	38 15 7	0 6 4	...	...	11 19 7	13 1 7	18 3 4[6]	170 5 10[6]
	Canongate	...	...	...	...	...	...	...	...	0 10 3[6]	0 10 3[6]
	Musselburgh	44 9 2	0 12 10	2 17 10	...	...	...	3 19 1	3 9 0	8 18 10	64 6 9
12. Elgin	Elgin	145 0 0	4 13 5	58 13 2	10 1 10	3 16 1	3 19 11	14 4 4	29 19 0	48 12 6	319 0 3
	Forres	15 0 0	...	...	...	...	...	...	...	...	15 0 0
13. Fife	Cupar	389 6 0	9 8 3	92 19 5	3 1 7	12 15 5	...	21 17 8	47 5 0	84 9 3	661 2 7
	Dunfermline	219 12 0	4 3 8	48 10 8	3 14 1	9 7 10	3 19 0	11 8 2	27 5 0	60 14 4	388 14 9
14. Forfar	Arbroath	99 10 0	0 17 11[6]	18 1 1[6]	0 8 3[6]	0 1 4	...	3 8 10[6]	8 3 4	22 17 6	153 8 5
	Brechin	43 18 0	0 13 6	7 4 6	...	0 8 10	...	2 13 4[6]	4 4 0	8 6 8[6]	67 8 11
	Dundee	793 3 6	20 4 11	334 16 4	18 7 8	68 4 7	12 5 3	37 5 11	54 0 3	189 10 5	1,527 18 10
	Forfar	197 1 2	6 8 5[6]	91 3 3	3 1 9	14 5 0	10 0 0	11 15 8[6]	28 9 5	47 10 2	409 14 11
	Montrose	161 13 0	2 1 0[6]	83 0 7[6]	1 6 0[6]	5 13 1[6]	1 18 10	4 4 10	6 5 2	39 5 8[6]	255 8 4[6]
15. Haddington	Haddington	186 0 0	14 7 6[6]	75 11 10	...	16 4 7[6]	...	17 5 0	24 10 8	53 3 10	387 3 6

	Dunbar	17 3 0	...	3 1 3	..	...	...	...	...	8 14 5	28 18 8
16. Inverness	Inverness	379 16 6[6]	...	90 5 2[6]	5 13 11	20 17 5[6]	7 6 3	33 1 8	33 9 11	66 18 9	637 9 8[6]
	Fort-William	95 0 0	0 16 0	7 8 3	0 1 1	0 2 5	...	2 12 7	7 9 0	12 16 1[6]	126 5 5[6]
	Lochmaddy	78 14 9	...	3 1 3[3]	0 11 7	2 2 8	...	1 19 8	6 12 8[6]	9 4 3[3]	102 6 11
	Portree	80 0 0	...	4 18 10[6]	0 1 9	1 11 11	2 0 3	1 5 8	4 19 6	5 12 10	100 10 9[6]
17. Kincardine	Stonehaven	137 19 10	1 13 7	26 11 6	0 14 1	0 10 0	0 9 2	5 0 2	12 3 7	7 6 8	192 8 7
18. Kinross	Kinross	72 0 0	5 1 2	29 17 6[6]	1 10 9	1 0 2[6]	2 3 8[6]	5 6 6	12 15 9	9 5 8[6]	139 1 4
19. Kirkcudbright	Kirkcudbright	212 4 0	0 14 0	49 11 10[6]	...	3 4 3	0 12 6	10 11 6	18 2 2	7 5 11[6]	302 6 3
	Maxwelltown	25 0 0	...	0 19 7	...	0 1 0	...	0 2 4	4 15 3	15 8 7	46 6 9
20. Lanark	Glasgow	3,199 16 6	163 1 6	1,944 2 0	46 12 9	906 5 6	161 0 0	283 19 3	301 17 2	1,868 8 10	8,875 3 6
	Airdrie	314 4 0	23 19 3	164 7 0	5 11 0[6]	47 18 1[6]	5 10 3	22 14 10	21 15 3	168 16 2[6]	774 15 11[6]
	Hamilton	302 15 4	11 15 4	141 2 5	15 4 9	43 3 8	2 12 6	17 13 4	33 14 5[6]	107 2 11	675 4 8[6]
	Lanark	192 6 11	3 13 3[6]	49 7 1[6]	1 9 4	5 5 6[6]	2 1 4	11 8 9	23 6 9[6]	41 8 1	330 7 2
21. Linlithgow	Linlithgow	196 2 6	0 3 7	92 8 10	1 6 8	10 19 9	2 15 5	10 16 5	16 15 0	59 5 2	390 13 4
22. Nairn	Nairn	68 0 0	0 18 7	19 6 2	0 11 10	1 1 0	2 13 0	6 7 3	11 10 4[3]	8 19 9	119 7 11[6]
23. Orkney	Kirkwall	98 0 0	0 12 11[6]	6 17 0[6]	...	2 8 4	...	1 5 7	0 15 0	18 0 0	127 18 11
24. Peebles	Peebles	80 0 0	12 7 7[6]	14 11 1[3]	...	...	...	3 16 10	28 7 3	14 4 7	153 7 4[9]
25. Perth	Perth	544 15 3	10 0 7	204 19 10[9]	16 13 5[6]	54 15 2[3]	3 10 4	42 2 9	39 7 2[3]	66 4 7[9]	982 9 3[9]
	Dunblane	83 0 0	1 1 10	19 1 3[6]	...	3 7 5[3]	...	9 2 8	16 1 9	18 0 9[6]	149 15 9[6]
26. Renfrew	Paisley	591 14 7	32 7 10	334 15 10	13 18 4	73 4 7	16 7 2	62 12 7	75 11 4	162 8 3	1,363 0 6
	Greenock	286 19 4	10 13 1	94 10 5	2 18 3	13 8 10	2 19 10	14 10 7	31 12 2	48 15 10	506 8 4
	Pollockshaws	30 0 0	...	9 6 10	...	4 7 5	1 12 6	3 0 4	9 3 6	11 7 9	68 18 4
27. Ross and Cromarty	Dingwall	163 18 7[6]	4 18 8[6]	27 19 2[6]	6 8 9[6]	4 17 1	...	9 5 11[6]	28 17 9	39 18 6[6]	286 4 8
	Tain	55 0 0	2 7 7[6]	8 1 4	0 15 8[6]	0 9 1	...	3 1 2	15 6 3	10 5 8[6]	95 6 5[6]
	Cromarty	41 10 0	1 1 3	2 7 1	0 17 2[6]	...	1 11 0	1 11 6	6 18 4	7 6 4[6]	63 2 9
	Stornoway	56 15 0	...	9 18 6	0 11 1	...	1 2 9	4 2 2	17 16 7	10 12 1	100 18 2
28. Roxburgh	Jedburgh	294 11 3	8 10 10	80 8 6	2 5 8	36 17 2[6]	13 12 6	13 17 8	41 14 0	69 16 9[6]	561 14 5
	Hawick	15 0 0	0 10 5	1 3 6	1 14 3	...	...	2 18 4	6 10 5[6]	3 2 11[6]	30 19 11
	Kelso	15 0 0	1 0 1	2 3 6	...	...	...	1 13 0	4 12 7	15 4 10	39 14 0
29. Selkirk	Selkirk	101 5 0	2 1 11	8 18 3[3]	0 0 3	1 4 4[6]	...	3 7 1[9]	10 3 6[6]	9 15 3[3]	136 15 9[3]
30. Stirling	Stirling	541 5 10	20 2 4[6]	199 0 10[9]	9 14 11[6]	45 9 11[6]	10 1 10	[illegible]3 1 10[6]	59 5 8[6]	196 7 3[3]	1,144 10 8[6]
	Falkirk	40 0 0	...	9 5 0	...	...	0 3 0	1 10 4	4 3 4	9 15 7[6]	64 17 3[6]
31. Sutherland	Dornoch	91 0 0	2 4 11	9 7 4[6]	0 7 6	1 0 9	...	10 5 4	25 0 8	28 3 4	167 9 10[6]
32. Wigtown	Wigtown	79 5 6	0 19 7[6]	53 2 1[5]	0 5 6	2 17 6	1 13 0	3 15 0	12 12 9	42 0 4	197 1 4[1]
	Stranraer	106 0 0	0 19 10	34 12 9	0 6 3	6 7 2	2 0 0	5 9 6	10 17 11	48 12 3	215 5 8
33. Lerwick	Fort-Charlotte	84 12 0	0 4 0	12 16 3	2 14 5	7 1 7	2 0 0	3 18 5	12 11 0	4 2 0[6]	129 19 8[6]
		16,986 9 6	641 7 11	7,199 12 10[5]	280 3 9	2,396 10 8	321 5 8	1,199 15 7[3]	1,971 1 11[6]	5,369 7 3[3]	36,365 15 2[5]
25. Perth	General Prison, including the special expense of transmitting Prisoners to and from that Prison, amounting to £538, 17s. 5d.	5,786 1 9[3]	520 11 10[9]	4,436 11 3	259 5 3	1,277 4 2[1]	563 18 0[11]	420 7 3	808 1 9[7]	2,035 9 6[5]	16,107 11 0
	Total,	22,772 11 3[3]	1,161 19 9[9]	11,636 4 1[5]	539 9 0	3,673 14 10[1]	885 3 8[11]	1,620 2 10[3]	2,779 3 9[1]	7,404 16 9[3]	52,473 6 2[5]

(No. XVIII. Continued.)

(No. XVIII. *Continued.*)

3. AVERAGE EARNINGS AND

Comparative Statement of the Total Number of Criminal Prisoners confined in each of the Prisons in each such Prisoner; and the Daily Average Number of such Prisoners; as also of their Average

COUNTIES.	PRISONS.	Total Number in Confinement during the Year.	Average Duration of Confinement of each Criminal Prisoner. Days.	Average Daily Number in Custody entered to the nearest Unit.	Average Cost per Prisoner for the Year ended 30th June 1860.				
					Salaries and Wages.	Prison Diet.	Clothing.	Bedding.	Lighting.
1	2	3	4	5	6	7	8	9	10
					£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Aberdeen	Aberdeen	866	28	66	13 14 4	4 16 11^{3}	0 17 9^{3}	0 2 9^{6}	0 15 3
2. Argyle	Inveraray	107	32	9	17 0 5^{3}	5 5 10^{6}	1 0 0	0 6 0	1 13 8
	Campbeltown	95	31	8	15 18 7^{6}	6 10 0	0 12 6	0 7 4	0 19 8
3. Ayr	Ayr	383	45	45	15 7 2^{9}	6 2 0^{6}	0 5 2	0 0 6^{9}	0 17 5^{9}
	Kilmarnock	233	20	13	13 5 2^{9}	5 12 5^{9}	0 11 4	0 1 2^{8}	0 14 4^{6}
4. Banff	Banff	80	41	9	11 9 9^{3}	9 4 5	1 14 2^{8}	0 4 10^{3}	1 0 11^{3}
5. Berwick	Greenlaw	67	32	6	26 7 4	5 19 4^{9}	1 16 0	0 15 2^{9}	0 16 11^{6}
6. Bute	Rothesay*	56	25	4	...	...	...	...	...
7. Caithness	Wick	83	26	6	19 7 2	6 15 4^{9}	1 0 6^{6}	0 16 5	1 9 11^{6}
8. Clackmannan	Alloa	81	32	7	27 0 10^{3}	7 7 2^{6}	2 4 2^{6}	0 17 10^{3}	2 3 7^{7}
9. Dumbarton	Dumbarton	299	19	15	14 15 5^{6}	5 18 0	0 19 5^{6}	0 4 4	0 13 11^{6}
10. Dumfries	Dumfries	320	21	18	16 12 8	5 7 4^{3}	0 8 8^{6}	0 2 8^{6}	1 3 6
11. Edinburgh	Edinburgh	4,818	26	341	6 19 7^{1}	3 19 8^{5}	2 6 0	...	0 9 9^{3}
	Court Buildings' Prison	805	5	11	7 16 10^{3}	3 10 6^{1}	...	...	1 1 8^{3}
12. Elgin	Elgin	144	30	12	12 1 8	4 17 9	0 6 4	0 6 8	1 3 8
13. Fife	Cupar	240	24	16	24 6 7	5 16 3	0 16 0	...	1 7 4
	Dunfermline	102	33	9	24 8 0	5 7 10	1 1 0	0 8 9	1 5 4
14. Forfar	Dundee	1,061	26	74	10 14 4^{6}	4 10 5^{11}	0 18 5^{3}	0 3 3^{9}	0 10 0^{11}
	Forfar	167	41	19	10 7 5^{2}	4 15 11^{6}	0 15 0	0 10 6^{3}	0 12 4^{10}
	Montrose	98	22	6	26 18 10	5 10 1^{3}	0 18 10^{3}	0 6 5^{8}	0 14 1^{8}
15. Haddington	Haddington	191	25	13	14 6 2	5 16 3^{6}	1 5 0	...	1 6 6^{6}
16. Inverness	Inverness	159	34	15	25 6 5	6 0 4	1 7 9^{9}	0 9 1	2 4 1^{3}
17. Kincardine	Stonehaven	87	21	5	27 11 11^{6}	5 6 3^{6}	0 2 0	0 1 10	1 0 0^{6}
18. Kinross	Kinross*	64	12	2	...	...	...	...	...
19. Kirkcudbright	Kirkcudbright	200	4	2	18 9 9^{9}	4 6 5^{1}	0 5 7^{4}	0 1 1	0 18 5^{1}
20. Lanark	Glasgow	3,989	38	406	7 17 7^{6}	4 15 9	2 4 7^{6}	0 7 11	0 13 11^{9}
	Airdrie	823	18	40	7 17 1	4 2 2	1 3 11^{3}	0 2 9	0 11 4^{3}
	Hamilton	565	23	35	8 13 0	4 0 7^{9}	1 4 8	0 1 6	0 10
	Lanark	110	30	9	21 7 5	5 9 8	0 11 8^{9}	0 4 7	1 5
21. Linlithgow	Linlithgow	157	39	17	11 10 8^{9}	5 8 9	0 12 11^{6}	0 3 3^{1}	0 12 8^{9}
22. Nairn	Nairn	31	23	2	...	...	...	...	...
23. Orkney	Kirkwall*	42	8	1	...	...	...	...	...
24. Peebles	Peebles*	39	10	1	...	...	...	...	...
25. Perth	Perth	637	26	46	11 16 10	4 9 1^{6}	1 3 9^{6}	0 1 6^{3}	0 18 3^{9}
	Dunblane	70	21	4	20 15 0	4 15 3^{9}	0 16 10^{3}	...	2 5 8
26. Renfrew	Paisley	989	27	74	7 19 11^{1}	4 10 5^{9}	0 19 9^{6}	0 4 5	0 16 11^{8}
	Greenock	505	14	20	14 6 11^{7}	4 14 6^{3}	0 13 5^{3}	0 2 11^{10}	0 14 6^{4}
27. Ross and Cromarty	Dingwall	92	24	6	26 3 6	4 13 2^{3}	0 16 2	...	1 10 10
28. Roxburgh	Jedburgh	175	27	13	22 13 2^{4}	6 3 8^{9}	2 16 8^{6}	1 0 11^{6}	1 1 4
29. Selkirk	Selkirk*	53	7	1	...	...	...	...	...
30. Stirling	Stirling	570	36	56	9 13 3^{9}	3 11 1	0 16 2^{9}	0 3 7^{3}	1 2 6^{3}
31. Sutherland	Dornoch*	21	...	...	...	...	...	...	...
32. Wigtown	Wigtown	77	28	6	9 18 2^{3}	6 14 0$\frac{1}{2}$	0 7 2^{3}	0 4 1^{6}	0 9 4^{6}
	Stranraer	89	33	8	17 13 4	5 15 5^{6}	1 1 2^{3}	0 6 8	0 18 3
33. Zetland	Fort-Charlotte*	38	10	1	...	...	...	...	...
25. Perth	General Prison, exclusive of the special expense of transmitting Prisoners to and from that Prison,	1,097	233	697	8 6 0^{4}	6 7 3^{7}	1 16 7^{9}	0 16 2^{3}	0 12 0^{3}
In Scotland	Whole Prisons	22,279	36	2,191	10 7 10^{5}	5 6 2$\frac{5}{8}$	1 13 6^{5}	0 8 1	0 14 9^{6}

* In the Prisons marked with an asterisk the average daily number of Prisoners in custody was under five.

No. XVIII. *Continued.*)

COST PER HEAD FOR THE YEAR.

which the Average Daily Number in Custody is Five or upwards; the Average Duration of Confinement of Yearly Cost per Head, and Average Earnings, all for the Year ended 30th June 1860.

Fuel.	Gross Cost per Head, including all Expenses.	Average Earnings per Head available for Prison.	Nett Cost per Head after deducting Earnings.	Earnings of Prisoners who have been in Confinement for Periods of Six Months, or upwards, (under Sentence.)			PRISONS.	COUNTIES.
				Average Daily Number of such Prisoners.	Total Earnings.	Average Earnings.		
11	12	13	14	15	16	17	2	1
£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.		
1 12 11⁹	24 16 11⁶	2 17 1⁶	21 19 10	5	28 11 10	5 14 4⁸	Aberdeen . . .	1. Aberdeen
2 4 11³	29 3 3⁶	1 19 0⁶	27 4 3	...	...	...	Inveraray . . .	2. Argyle
3 8 1⁹	30 5 3	2 10 5⁹	27 14 9⁸	...	...	...	Campbeltown . .	
1 8 0⁶	26 18 0⁸	2 19 0⁶	23 18 11⁹	4	25 0 0	6 5 0	Ayr	3. Ayr
1 3 0	24 9 10	4 2 1⁸	20 7 8⁹	...	...	...	Kilmarnock . .	
2 19 2	32 15 10	2 10 3⁸	30 5 6⁹	1	4 1 7⁶	4 1 7⁶	Banff . . .	4. Banff
4 3 11⁹	42 13 0⁸	0 12 2⁸	42 0 10	...	...	...	Greenlaw . . .	5. Berwick
...	...	...	..	...	...	...	Rothesay* . . .	6. Bute
2 17 8⁹	32 7 2	1 0 4⁸	31 6 9⁶				Wick . . .	7. Caithness
3 1 10⁴	57 14 4⁷	2 12 7⁴	55 1 9⁸	...	...	...	Alloa . . .	8. Clackmannan
1 6 11⁸	24 13 0	2 0 8	22 12 9	1	2 18 0	2 18 0	Dumbarton . .	9. Dumbarton
1 15 5	29 11 8	6 9 3⁶	23 2 4⁶	...	...	...	Dumfries . . .	10. Dumfries
0 17 6²	18 4 10⁸	2 10 4	15 14 6⁸	38	185 18 6	4 17 10	Edinburgh . .	11. Edinburgh
1 3 9⁴	15 9 7⁶	...	15 9 7⁶	...	...	...	Court Buildings' Prison	
2 9 11	26 11 8	2 19 2	23 12 6	1	3 18 0	3 18 0	Elgin . . .	12. Elgin
2 19 1	41 6 5	3 19 7	37 6 10	...	...	...	Cupar . . .	13. Fife
3 0 6	43 3 10	4 5 2	38 18 8	...	...	...	Dunfermline . .	
0 14 7²	20 12 11⁶	4 10 1¹⁰	16 2 9⁸	13	68 12 3	5 5 6⁸	Dundee . . .	14. Forfar
1 9 11⁵	21 11 3⁹	3 19 6⁸	17 11 9⁷	4	17 14 0	4 8 6	Forfar . . .	
1 0 10⁴	42 11 4⁹	7 1 0⁸	35 10 4⁷	...	...	...	Montrose . . .	
1 17 9	29 15 8	3 0 5	26 15 3	...	...	...	Haddington . .	15. Haddington
2 4 7⁹	42 5 11⁹	14 12 9	27 13 2⁹	2	25 4 10	12 12 5	Inverness . . .	16. Inverness
2 8 8⁶	36 10 10	1 19 4⁶	34 11 5⁶	...	...	...	Stonehaven . .	17. Kincardine
...	...	...	...	...	...	...	Kinross* . . .	18. Kinross*
1 11 6⁹	26 6 10⁸	2 6 7⁸	24 0 3	...	...	...	Kirkcudbright . .	19. Kirkcudbright
0 14 10⁵	21 17 2⁶	2 17 5⁹	18 19 8⁹	43	256 13 8	5 19 4⁸	Glasgow . . .	20. Lanark
0 10 10⁶	19 7 4⁹	2 10 10⁶	16 16 6⁸	3	9 10 0	3 3 4	Airdrie . . .	
0 19 3⁸	19 5 10³	1 12 7⁶	17 13 2⁹	5	29 6 10⁶	5 17 4⁶	Hamilton . . .	
2 11 10³	36 14 1⁶	1 10 4⁶	35 3 9	2	8 8 6	4 4 3	Lanark . . .	
0 19 8²	22 19 7⁸	3 11 7⁶	19 7 11⁹	4	18 18 3	4 14 6⁹	Linlithgow . .	21. Linlithgow
...	...	...	...	...	...	...	Nairn . . .	22. Nairn
...	...	...	...	...	...	...	Kirkwall* . . .	23. Orkney
...	...	...	...	...	...	...	Peebles* . . .	24. Peebles
0 17 1³	21 7 2⁶	4 1 6⁹	17 5 7⁹	10	49 17 6	4 19 9	Perth . . .	25. Perth
4 0 5⁸	37 8 11⁸	1 16 6⁸	35 12 5	...	...	...	Dunblane . . .	
1 0 5	18 8 4⁷	2 16 5	15 11 11⁷	14	65 1 2	4 12 11	Paisley . . .	26. Renfrew
1 11 7³	25 6 5	1 17 9⁸	23 8 7⁸	...	...	...	Greenock . . .	
4 14 7⁶	47 16 1⁸	3 7 6	44 8 7⁸	...	...	...	Dingwall . . .	27. Ross and Cromarty
3 4 1⁶	43 4 2	4 12 3⁶	38 11 10⁶	1	3 0 0	3 0 0	Jedburgh . .	28. Roxburgh
...	...	...	...	...	...	...	Selkirk* . . .	29. Selkirk
1 1 2	20 8 9	2 0 5³	18 8 3⁹	8	22 11 7	2 16 5⁸	Stirling . . .	30. Stirling
...	...	...	...	...	...	...	Dornoch* . . .	31. Sutherland
1 11 7½	24 12 8	0 5 8	24 7 0	...	...	...	Wigtown . . .	32. Wigtown
1 16 3⁹	35 17 7½	4 2 8	31 14 11½	..	...	...	Stranraer . . .	
...	...	...	...	...	...	...	Fort-Charlotte . .	33. Zetland
1 3 2⁹	23 2 2⁴	3 2 6⁹	19 19 7⁷	665	2,180 5 9⁶	3 5 6¹⁰	General Prison, exclusive of the special expense of transmitting Prisoners to and from that Prison,	25. Perth
1 5 4⁵	23 18 11⅞	3 0 8⁷	20 18 3⅞	824	3,005 12 4⁶	3 12 11⁵	Whole Prisons . .	In Scotland

(No. XVIII.)
Continued.

4. VIEW of the OUTLAY connected with the Prisoners' Labour in the several Prisons

COUNTIES.	PRISONS.	DEBTOR.			CREDITOR.	
		Undisposed of Goods and Materials, and Implements of Labour, on hand at 30th June 1859.	Outlay this Year for Materials, Implements, Carriage of Goods, &c.	Loss by Bad Debts.	Sum of Debit.	Sales and Deliveries of Work to Purchasers and Employers.	Furniture and Goods issued for the use of the Prison, other than Implements of Labour.
1	2	3	4	5	6	7	8
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Aberdeen	Aberdeen	137 16 0	107 12 8	...	245 8 8	311 6 2	12 0 6
	Peterhead	17 13 6	...	...	17 13 6	9 10 0	...
2. Argyle	Inveraray	28 3 6	9 13 1	...	37 16 7	31 4 5	...
	Campbeltown	3 17 10	8 11 5	...	12 9 3	9 17 10	0 9 0
	Lochgilphead	3 7 10	...	...	3 7 10	1 11 6	...
3. Ayr	Ayr	96 0 0	100 17 11	...	196 17 11	111 7 6	5 15 4
	Kilmarnock	26 1 5	28 4 9	...	54 6 2	53 18 2	0 13 4
4. Banff	Banff	12 5 6	11 6 4	...	23 11 10	16 8 10	...
5. Berwick	Greenlaw	21 1 3	3 4 11	...	24 6 2	1 17 11	...
6. Bute	Rothesay	...	...	...	...	3 4 0	...
7. Caithness	Wick	63 17 0	0 3 9	...	64 0 9	0 16 0	2 15 11
8. Clackmannan	Alloa	9 9 10	13 11 8	...	23 1 6	11 9 4	...
9. Dumbarton	Dumbarton	12 10 0	33 5 3	6 16 4	52 11 7	53 6 8	5 10 0
10. Dumfries	Dumfries	4 0 0	30 11 4	...	34 11 4	64 18 9	3 0 0
11. Edinburgh	Edinburgh	199 3 3	396 14 8	...	595 17 11	480 18 8	137 4 2
12. Elgin	Elgin	4 5 0	18 13 11	4 10 0	27 8 11	41 8 4	...
13. Fife	Cupar	45 0 0	7 2 1	...	52 2 1	52 19 2	...
	Dunfermline	19 10 0	40 15 2	...	60 5 2	60 11 7	0 5 0
14. Forfar	Arbroath	2 11 3	13 7 1	...	15 18 4	28 5 7	...
	Brechin	0 15 5	1 8 9	...	2 4 2	3 15 7	...
	Dundee	72 15 9	53 2 6	...	125 18 3	236 6 2	20 6 3
	Forfar	69 13 10	2 2 2	...	71 16 0	75 8 3	0 18 6
	Montrose	48 3 4	53 11 11	...	101 15 3	74 8 3	...
15. Haddington	Haddington	5 18 0	27 0 6	...	32 18 6	36 2 0	...
16. Inverness	Inverness	327 17 6	832 15 5	4 0 0	1,164 12 11	849 5 9	...
	Fort-William	4 14 0	1 9 10	...	6 3 10	8 0 3	...
	Lochmaddy	2 4 11	...	...	2 4 11	1 4 2	...
	Portree	6 4 9	1 11 9	...	7 16 6	1 19 5	0 3 6
17. Kincardine	Stonehaven	2 18 6	3 14 9	...	6 13 3	11 17 0	...
18. Kinross	Kinross	14 7 3	...	...	14 7 3	3 15 7	...
19. Kirkcudbright	Kirkcudbright	106 5 1	21 19 6	...	128 4 7	84 15 4	4 7 9
20. Lanark	Glasgow	306 19 4	324 7 9	...	631 7 1	524 12 2	...
	Airdrie	8 0 0	27 1 10	...	35 1 10	73 13 3	...
	Hamilton	46 15 0	58 7 11	...	105 2 11	95 9 5	...
	Lanark	28 19 0	33 15 9	...	62 14 9	37 2 8	...
21. Linlithgow	Linlithgow	18 16 2	40 4 11	...	59 1 1	78 11 1	2 11 10
22. Nairn	Nairn	0 12 0	0 6 0	...	0 18 0	1 10 0	...
23. Orkney	Kirkwall	1 1 11	...	...	1 1 11	0 13 11	...
24. Peebles	Peebles	26 2 11	28 2 6	...	54 5 5	12 15 4	...
25. Perth	Perth	83 8 2	13 2 6	...	96 10 8	109 3 11	...
	Dunblane	...	...	...	...	4 14 1	...
26. Renfrew	Paisley	119 0 4	90 0 7	...	209 0 11	184 11 10	12 14 3
	Greenock	23 3 6	27 8 11	...	50 12 5	56 18 0	0 2 6
27. Ross & Cromarty	Dingwall	16 0 10	7 14 8	...	23 15 6	5 14 6	...
28. Roxburgh	Jedburgh	28 12 6	4 4 11	...	32 17 5	23 5 0	4 0 0
29. Selkirk	Selkirk	9 3 8	5 6 10	...	14 10 6	8 0 7	0 1 3
30. Stirling	Stirling	60 14 9	114 7 4	...	175 2 1	181 11 1	3 10 0
31. Sutherland	Dornoch	36 15 9	0 12 3	...	37 8 1	3 0 1	1 0 2
32. Wigtown	Stranraer	29 1 6	7 7 8	...	36 9 2	17 6 8	2 10 0
	Wigtown	42 1 8	16 2 7	...	58 4 3	33 15 4	6 4 0
33. Zetland	Fort-Charlotte	9 8 0	0 5 6	...	9 13 6	5 9 11	...
		2,263 8 10	2,621 13 9	15 6 4	4,900 8 11	4,139 12 5	226 3 3
25. Perth	General Prison,	1,341 17 9	2,919 3 8	...	4,261 1 5	3,009 8 8	1,186 18 0
	TOTAL,	3,605 6 7	5,540 17 6	15 6 4	9,161 10 5	7,149 1 1	1,413 1 3

(No. XVIII. *Continued.*)

in Scotland, and of the Returns therefrom, in the Year ended 30th June 1860.

CREDITOR.								
Earnings Rated to Prisoners employed in Washing, Sewing, and other Prison Services.	Other Returns.	Value of Undisposed of Goods and Materials, and Implements of Labour, on hand at 30th June 1860.	Sum of Credit.	Available Nett Profits carried to Credit of General Fund for Current Expenses.	Loss.	PRISONS.	COUNTIES.
9	10	11	12	13	14	2	1
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
87 3 2	...	73 10 2[6]	434 0 0[6]	188 11 4	...	Aberdeen . .	1. Aberdeen
0 5 10	...	9 15 0	19 10 10	1 17 4	...	Peterhead . .	
6 7 6	...	17 16 0	55 7 11	17 11 4	...	Inveraray . .	2. Argyle
15 13 8	...	6 12 7	32 13 1	20 3 10	...	Campbeltown .	
0 2 4	...	1 16 4	3 10 2	0 2 4	...	Lochgilphead .	
100 17 0	...	112 0 0	329 19 10	133 1 11	...	Ayr . . .	3. Ayr
24 6 5	2 14 0	26 1 8	107 13 7	53 7 5	...	Kilmarnock . .	
10 4 1	...	19 11 6	46 4 5	22 12 7	...	Banff . . .	4. Banff
1 6 10	1 16 2	22 18 5	27 19 4[6]	3 13 2	...	Greenlaw . .	5. Berwick
3 17 2	...	...	7 1 2	7 1 2	...	Rothesay . .	6. Bute
5 18 0	...	60 13 0	70 2 11	6 2 2	...	Wick . . .	7. Caithness
14 12 6	...	15 8 0	41 9 10	18 8 3[6]	...	Alloa . . .	8. Clackmannan
13 12 0	...	10 7 0	82 15 8	30 4 1	...	Dumbarton . .	9. Dumbarton
80 0 0	...	3 0 0	150 18 9	116 7 5	...	Dumfries . .	10. Dumfries
610 9 4[3]	...	225 10 0	1,454 2 3	858 4 3[6]	...	Edinburgh . .	11. Edinburgh
11 10 0	...	10 0 6	62 18 10	35 9 11	...	Elgin . . .	12. Elgin
20 16 0	...	42 0 0	115 15 2	63 13 1	...	Cupar . . .	13. Fife
19 0 0	...	18 15 0	98 11 7	38 6 5	...	Dunfermline .	
1 10 0	...	2 7 0	32 2 7	16 4 3	...	Arbroath . .	14. Forfar
...	...	0 12 6	4 8 1	2 3 11	...	Brechin . .	
89 14 2	...	113 3 3	459 9 10[6]	333 11 7[6]	...	Dundee . .	
22 4 8	...	48 15 4	147 6 9	75 10 9	...	Forfar . .	
7 16 0	...	62 2 1[6]	144 1 4[6]	42 6 1	...	Montrose . .	
26 16 11	...	9 5 0	72 3 11[6]	39 5 5[6]	...	Haddington . .	15. Haddington
50 3 1	8 7 1	476 8 5[6]	1,384 4 5	219 11 5[6]	...	Inverness . .	16. Inverness
4 17 0	...	3 7 0	16 4 3	10 0 5	...	Fort-William .	
2 15 3	...	1 0 9	5 0 2	2 15 3	...	Lochmaddy .	
1 1 3	...	6 0 3	9 4 5	1 7 11	...	Portree . .	
2 3 6	...	2 9 6	16 10 0	9 16 9	...	Stonehaven . .	17. Kincardine
3 13 10	...	11 0 0	18 9 5	4 2 1[6]	...	Kinross . . .	18. Kinross
8 6 5	...	107 10 0	154 19 6	-26 14 11	...	Kirkcudbright	19. Kirkcudbright
913 16 0	...	359 17 2	1,798 5 4	1,166 18 3	...	Glasgow . .	20. Lanark
57 16 0	...	5 8 0	136 17 3	101 15 5	...	Airdrie .	
36 10 6	...	30 5 0	162 4 11	57 1 11[6]	...	Hamilton . .	
10 8 6	...	28 17 0	76 8 2	13 13 5	...	Lanark . . .	
21 8 2	...	17 7 8	119 18 9	60 17 8	...	Linlithgow . .	21. Linlithgow
1 2 6	...	...	2 12 6	1 14 6		Nairn . . .	22. Nairn
...	...	1 1 11[6]	1 15 11	0 13 11[6]	...	Kirkwall . .	23. Orkney
...	...	44 2 1[6]	56 17 5[6]	2 12 0	...	Peebles . . .	24. Peebles
82 5 10	8 1 2	79 10 9[6]	279 1 8[6]	182 11 0	...	Perth . . .	25. Perth
1 0 2	...	...	5 14 3[3]	5 14 3[3]	...	Dunblane . .	
101 19 5	...	118 10 6	417 16 0	208 15 1	...	Paisley . . .	26. Renfrew
17 10 8	...	13 17 7	88 8 9	37 16 4	...	Greenock . .	
20 5 0	...	18 1 0[6]	44 0 6[6]	20 5 0	...	Dingwall . .	27. Ross and Cromarty
37 0 0	...	28 12 6	92 17 6	60 0 1	...	Jedburgh . .	28. Roxburgh
1 1 7[5]	...	11 6 8[6]	20 10 2[6]	5 19 7[9]	...	Selkirk . . .	29. Selkirk
47 1 9[3]	...	56 8 9	288 6 8	113 4 7	...	Stirling . . .	30. Stirling
1 15 6	0 2 6	33 19 9[6]	39 18 1	2 10 0	...	Dornoch . .	31. Sutherland
15 8 6	...	26 0 0	61 5 2	24 16 0	...	Stranraer . .	32. Wigtown
10 11 8	...	10 15 0	61 6 0	3 1 9	...	Wigtown . .	
0 19 0	...	6 0 0	12 8 11	2 15 5	..	Fort-Charlotte .	33. Zetland
2,575 4 9[3]	21 0 11	2,409 12 11[6]	9,371 14 3[9]	4,471 5 4	...		
725 8 5[7]	...	1,519 12 0[6]	6,441 7 3[3]	2,180 5 9[6]	...	General Prison	25. Perth
3,300 13 2[10]	21 0 11	3,929 5 0	15,813 1 7	6,651 11 1[6]	...		

No. XIX.—TRIENNIAL COMPARISON OF AVERAGE

Comparative Statement of the Average Daily Number of Criminal Prisoners in the Prisons and of their Average Yearly Cost per Head, and Average

COUNTIES.	PRISONS.	Average Daily Number in Custody.	Average Yearly Cost per Head in the three Years ended				
			Salaries and Wages.	Prison Diet.	Clothing.	Bedding.	Lighting.
1	2	3	4	5	6	7	8
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1 Aberdeen .	Aberdeen . .	63	14 4 9^{6}	4 14 2^{6}	0 16 4^{9}	0 4 10^{9}	0 16 9^{9}
2. Argyle .	Inveraray . .	10	15 17 9	5 10 11^{6}	1 0 0	0 4 8	1 13 9^{6}
	Campbeltown .	8	14 16 1^{6}	5 16 2^{6}	0 11 7^{3}	0 7 6^{3}	1 0 6
3. Ayr . .	Ayr . . .	85	11 8 9^{3}	5 16 9	1 3 3	0 6 6^{3}	0 13 0
	Kilmarnock .	12	13 8 10^{3}	5 10 6^{3}	0 15 0^{3}	0 1 10^{9}	0 14 8^{6}
4. Banff .. .	Banff . . .	7	15 6 4^{3}	9 2 7	1 11 8^{6}	0 7 8^{1}	1 3 10^{3}
5. Berwick .	Greenlaw . .	7	21 9 6^{3}	5 8 1^{6}	1 17 5^{9}	0 10 10^{6}	0 19 10^{3}
6. Bute . .	Rothesay* . .	...	...	...	...	...	...
7. Caithness .	Wick* . .	...	...	...	...	...	...
8. Clackmannan	Alloa . . .	7	25 12 7^{2}	7 8 3^{1}	2 11 5^{10}	0 14 1^{10}	2 0 1^{11}
9. Dumbarton .	Dumbarton . .	21	11 6 5^{9}	5 11 2^{3}	0 18 11	0 4 3^{9}	0 12 10
10. Dumfries .	Dumfries . .	24	13 1 6^{9}	4 14 6	0 9 9^{3}	0 5 1^{6}	1 1 4^{9}
11. Edinburgh .	Edinburgh . .	337	6 17 8^{5}	3 19 9^{5}	2 5 6^{10}	...	0 9 3^{10}
12. Elgin . .	Elgin . . .	12	12 9 0	4 16 6	0 5 8	0 5 9	0 18 9
13. Fife . .	Cupar . .	20	20 14 9	5 7 0	0 16 7	0 4 11	1 6 4
	Dunfermline .	10	21 14 7	5 16 10	1 2 2	0 5 1	1 6 9
14. Forfar . .	Dundee . .	88	8 16 8^{3}	4 8 1^{3}	0 17 5^{8}	0 4 5^{9}	0 8 11^{1}
	Forfar . .	19	10 7 6^{9}	4 16 11^{7}	0 15 8^{6}	0 10 6^{7}	0 12 10^{4}
	Montrose . .	7	22 4 1^{9}	5 7 2^{11}	0 18 1	0 7 0^{5}	0 14 2^{5}
15. Haddington .	Haddington .	12	15 11 5^{3}	6 10 9	1 4 5	...	1 9 4
16. Inverness .	Inverness . .	15	24 12 3^{6}	6 7 9	1 6 5^{9}	0 7 2^{6}	2 4 6^{9}
17. Kincardine .	Stonehaven . .	7	21 3 10	5 0 8	0 5 7^{6}	0 2 8	0 15 7^{6}
18. Kinross .	Kinross* . .	...	...	...	...	...	...
19. Kirkcudbright	Kirkcudbright .	6	18 10 9	4 3 7^{3}	0 8 7^{2}	0 0 4	0 17 5
20. Lanark .	Glasgow . .	402	7 5 11	4 15 4^{3}	2 0 3^{6}	0 5 6^{3}	0 14 0^{6}
	Airdrie . .	38	7 4 3^{6}	4 2 3^{2}	1 3 10^{3}	0 11 2^{6}	0 11 0^{9}
	Hamilton . .	32	8 16 10^{3}	4 14 6^{6}	1 2 6^{3}	0 4 3^{6}	0 11 10^{3}
	Lanark . .	9	20 13 0	5 3 2	0 10 8	0 1 8	1 5 2
21. Linlithgow .	Linlithgow . .	15	13 0 9^{3}	5 2 1^{10}	0 14 7	0 4 7^{5}	0 12 8^{3}
22. Nairn . .	Nairn* . .	...	...	...	...	...	...
23. Orkney .	Kirkwall* . .	...	...	...	...	...	...
24. Peebles .	Peebles* . .	...	...	...	...	...	...
25. Perth . .	Perth . . .	51	10 17 7^{6}	4 7 0^{9}	0 15 10	0 3 2	0 17 0
	Dunblane . .	6	14 19 8^{6}	5 1 4^{6}	0 19 1^{9}	0 0 1	1 15 6^{9}
26. Renfrew .	Paisley . .	77	7 14 7^{4}	4 12 7^{1}	1 1 1^{6}	0 2 8^{4}	0 16 7
	Greenock . .	20	14 8 0	4 4 10^{9}	0 15 7	0 1 10^{7}	0 14 7^{8}_{1}
27. Ross & Cromarty	Dingwall . .	...	...	...	...	...	...
28. Roxburgh .	Jedburgh . .	13	22 13 7^{4}	5 7 10	1 19 9^{2}	0 7 11	1 3 0
29. Selkirk . .	Selkirk* . .	...	...	...	...	...	...
30. Stirling .	Stirling . .	63	8 16 4	4 5 6^{9}	0 15 7^{9}	0 2 10	0 19 1
31. Sutherland .	Dornoch* . .	...	...	...	...	...	...
32. Wigtown .	Wigtown . .	7	9 19 9	6 10 10	0 8 10^{6}	0 4 2_{9}	0 12 11^{8}
	Stranraer . .	7	16 14 2^{9}	5 2 2^{6}	0 13 8^{6}	0 2 9^{3}	0 16 10
33. Zetland .	Fort-Charlotte* .	...	...	...	...	...	...
25. Perth . .	General Prison, exclusive of the special expenses of transmitting Prisoners to and from that Prison . .	613	8 1 9^{2}	6 5 4^{8}	1 12 10^{7}	0 10 3^{1}	0 11 1^{10}
In Scotland .	Whole Prisons .	2186	9 16 7^{11}	5 4 $7\frac{3}{4}$	1 10 5^{6}	0 6 10_{8}	0 14 3^{10}

* In Prisons marked with an asterisk the Average Daily Number of Prisoners in Custody was under five.

YEARLY COST PER HEAD AND EARNINGS.

of Scotland in which the Average Daily Number of Prisoners in Custody is Five or upwards; Yearly Earnings in the Three Years ended 30th June 1860.

June 30, 1860. Fuel.	Gross Cost per Head including all Expenses.	Average Earnings per Head, available for the Prison.	Nett Cost per Head, after deducting Earnings.	Average Earnings of Prisoners who have been in Confinement Six Months, or upwards, under Sentence.	PRISONS.	COUNTIES.
9	10	11	12	13	2	1
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
1 10 8^{6}	25 7 11^{9}	2 10 10^{9}	22 17 1	5 5 0^{9}	Aberdeen	1. Aberdeen
2 8 7^{6}	28 9 10	1 12 1_{6}	26 17 8^{6}	2 8 4	Inveraray	2. Argyle
2 13 7^{9}	27 15 6	2 12 3^{2}	25 3 2^{9}	...	Campbeltown	
0 14 5^{3}	21 3 5^{3}	2 0 7^{3}	19 2 10	3 15 1^{3}	Ayr	3. Ayr
1 0 8^{6}	24 13 3^{6}	3 18 1^{6}	20 15 2	...	Kilmarnock	
3 17 7^{6}	37 0 8	2 9 3^{9}	34 11 4^{2}	2 13 4^{6}	Banff	4. Banff
4 3 0^{3}	38 2 1	0 11 4^{6}	37 10 8^{5}	...	Greenlaw	5. Berwick
...	...	...	...	...	Rothesay	6. Bute
...	...	...	...	...	Wick	7. Caithness
2 10 3^{6}	51 14 9^{2}	2 15 10^{6}	48 19 7^{7}	...	Alloa	8. Clackmannan
0 19 3^{9}	21 2 2^{6}	2 6 2	17 16 0	3 0 5	Dumbarton	9. Dumbarton
1 6 11^{9}	24 7 1^{3}	5 8 2	18 18 11^{3}	...	Dumfries	10. Dumfries
0 16 8^{4}	18 4 5	2 3 9	16 0 8	4 17 2	Edinburgh	11. Edinburgh
2 7 1	25 12 1	3 2 6	22 9 7	3 12 6	Elgin	12. Elgin
2 19 8	37 6 10	3 15 10	33 11 0	...	Cupar	13. Fife
1 19 11	39 3 10	3 18 2	35 5 8	...	Dunfermline	
0 12 10^{7}	18 7 6	3 16 10	14 10 8	4 18 1^{8}	Dundee	14. Forfar.
1 13 8^{7}	22 9 8^{11}	3 12 2^{8}	18 17 6^{3}	4 8 7^{1}	Forfar	
1 1 11^{3}	35 16 1^{4}	5 19 7^{6}	29 16 5^{10}	...	Montrose	
1 15 8^{6}	31 2 2^{6}	4 4 1^{9}	26 18 0^{9}	...	Haddington	15. Haddington
2 2 11^{3}	41 11 1^{6}	15 8 4^{9}	26 2 8^{3}	16 4 7^{6}	Inverness	16. Inverness
1 18 9	32 17 5	2 8 9^{3}	30 8 7^{6}	...	Stonehaven	17. Kincardine
...	...	...	...	...	Kinross	18. Kinross
1 12 1^{9}	26 17 3	2 13 3	24 4 0	...	Kirkcudbright	19. Kirkcudbright
0 14 7^{6}	21 15 4	2 19 9^{9}	18 15 7	5 17 8^{3}	Glasgow	20. Lanark
0 11 6^{6}	20 11 1	2 4 5	18 6 8	3 0 0	Airdrie	
1 1 7^{6}	21 3 8	2 8 4^{3}	18 5 3^{6}	...	Hamilton	
2 3 7	34 8 11	2 12 7^{3}	31 16 3^{9}	6 5 11	Lanark	
1 2 1^{3}	25 4 7	3 13 6^{3}	21 11 0^{3}	3 12 11^{6}	Linlithgow	21. Linlithgow
...	...	...	...	...	Nairn	22. Nairn
...	...	...	...	...	Kirkwall	23. Orkney
...	...	...	...	...	Peebles	24. Peebles
0 16 1^{9}	20 1 5	3 15 8	16 5 9	4 19 1^{6}	Perth	25. Perth
2 13 2^{6}	29 8 3^{2}	1 14 3^{9}	27 13 11	...	Dunblane	
1 0 0^{5}	18 5 7^{9}	3 0 1^{11}	15 5 5^{10}	5 5 7	Paisley	26. Renfrew
1 9 5^{11}	25 9 3^{4}	2 3 4^{3}	23 5 11^{1}	...	Greenock	
...	...	...	...	...	Dingwall	27. Ross & Cromarty
3 10 10^{3}	40 0 2^{6}	4 3 3^{6}	35 17 2^{7}	4 5 7	Jedburgh	28. Roxburgh
...	...	...	...	...	Selkirk	29. Selkirk
1 2 10^{3}	20 0 7^{6}	2 3 6^{9}	17 2 9^{3}	2 14 1	Stirling	30. Stirling
...	...	...	...	...	Dornoch	31. Sutherland
1 11 8	26 14 9	1 19 8	24 15 1	...	Wigtown	32. Wigtown
1 13 2	34 1 2	3 14 10^{4}	30 6 3^{6}	...	Stranraer	
...	...	...	...	...	Fort-Charlotte	33. Zetland
1 1 9^{3}	22 2 9^{6}	2 16 8^{7}	19 6 0^{11}	2 19 5^{3}	General Prison, exclusive of the special expenses of transmitting Prisoners to and from that Prison.	25. Perth
1 3 8^{5}	23 1 5^{3}	2 17 3^{5}	20 4 1^{10}	3 7 7	Whole Prisons	In Scotland

No. XX.—Abstract of Returns of Expenditure under the Prison Boards of the Several Counties in Scotland, chargeable on the Special Fund for Building, Altering, and Repairing Local Prisons, in the year ended 30th June 1860.

COUNTIES.	PRISONS.	Expenditure for the Year ended 30th June 1860.			
		For Prisons.	For Interest.	For Stamps.	Total.
1.	2.	3.	4.	5.	6.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Aberdeen	Aberdeen	116 12 2			
	Peterhead	9 12 0½			
	Huntly	0 18 0	...	...	129 15 7½
	Fraserburgh	2 13 5			
2. Argyll	.....		...	...	...
3. Ayr	.....		...	...	...
4. Banff	.....		...	...	...
5. Berwick	Dunse	11 15 3	...	...	11 15 3
6. Bute	Rothesay	.....	...	...	...
7. Caithness	.....		...	...	...
8. Clackmannan	Alloa	.....	...	...	...
9. Dumbarton	.....		...	...	...
10. Dumfries	.....		...	...	...
11. Edinburgh	Edinburgh	24 3 0	...	...	24 3 0
12. Elgin	Elgin	.....	...	...	...
13. Fife	.....		...	...	...
14. Forfar	Dundee	402 8 3			
	Forfar	17 15 1	...	...	420 3 4
15. Haddington	.....		...	...	...
16. Inverness	Lochmaddy	180 10 6			
	Portree	46 17 6	...	...	227 8 0
17. Kincardine	.....		...	...	...
18. Kinross	.....		...	...	...
19. Kirkcudbright	Kirkcudbright	18 9 4	...	...	18 9 4
20. Lanark	Glasgow	1038 14 7			
	Airdrie	987 17 9			
	Hamilton	115 14 1	...	...	2340 15 7
	Lanark	198 9 2			
21. Linlithgow	.....		...	...	...
22. Nairn	.....		...	...	...
23. Orkney	.....		...	...	...
24. Peebles	Peebles	.....	2 16 0	...	2 16 0
25. Perth	Dunblane	8 12 3	...	...	8 12 3
26. Renfrew	Paisley	42 19 11	...	0 0 7	43 0 6
27. Ross & Cromarty	Dingwall*	1660 0 0	65 10 8	...	1725 10 8
28. Roxburgh	Jedburgh	30 7 2			
	Hawick	21 9 1	...	...	51 16 3
29. Selkirk	.....		...	...	...
30. Stirling	.....		...	...	...
31. Sutherland	.....		...	...	...
32. Wigtown	.....		...	...	...
33. Zetland	Fort Charlotte	4 12 1	4 16 1	...	9 8 2
	Total,	4940 10 7½	73 2 9	0 0 7	5013 13 11½

* This sum of £1660 includes the price of the Prison site and arrears of Feu-duty, amounting to £1655, 10s. Of this sum £376, 8s. 4d. falls to be repaid by the Heritors of Western Ross as their proportion of the price of the site.

No. XXI.

ABSTRACT of the Accounts rendered by County Prison Boards through the General Board to Exchequer, for maintenance, after conviction, of Criminal Prisoners confined in Local Prisons who had been tried with a Jury, or by the Sheriffs without a Jury, where proceedings were conducted under Sheriffs' Warrants—for the two Half-Years ended 31st March and 30th September 1860, respectively, and for previous periods for which Accounts were not rendered at the proper time.

COUNTIES.	For Prisoners tried by Jury.		For Prisoners tried without Jury.		TOTAL.
	Half-Year to 31st March 1860.	Half-Year to 30th Sept. 1860.	Half-Year to 31st March 1860.	Half-Year to 30th Sept. 1860.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Aberdeen, .	53 2 10	34 14 8	42 2 2	29 19 0	159 18 8
2. Argyle, .	36 0 7	24 15 0	26 9 8	18 19 9	106 5 0
3. Ayr, . .	61 19 9	41 6 6	45 14 4	34 11 11	183 12 6
4. Banff, .	21 1 5	21 2 11	15 8 10	15 16 7	73 9 9
5. Berwick, .	19 9 4	12 14 8	23 19 10	19 9 3	75 13 1
6. Bute, .	23 17 2	17 17 9	6 6 6	3 6 9	51 8 2
7. Clackmannan,	17 14 6	12 1 9	17 2 2	7 9 5	54 7 10
8. Caithness, .	.....	.....	.....	.....	.....
9. Dumbarton,	25 15 1	9 15 10	11 10 6	18 9 5	65 10 10
10. Dumfries, .	13 17 10	13 8 2	28 8 8	16 6 7	72 1 3
11. Edinburgh,	193 9 0	194 9 1	135 8 8	108 10 11	631 17 8
12. Elgin, .	28 13 6	18 16 7	15 7 6	11 15 11	74 13 6
13. Fife . .	25 12 10	24 2 5	32 4 2	30 5 1	112 4 6
14. Forfar, .	132 10 6	132 5 10	18 0 11	21 6 4	304 3 7
15. Haddington,	12 16 8	20 5 4	11 13 0	26 7 3	71 2 3
16. Inverness, .	15 7 11	24 13 7	30 19 10	13 2 0	84 3 4
17. Kincardine,	0 7 1	1 9 9	7 18 10	10 3 8	19 19 4
18. Kinross, .	.....	.....	.....	.....	.....
19. Kirkcudbright,	6 5 7	7 1 9	17 19 4	9 12 6	40 19 2
20. Lanark, .	433 12 6	431 1 3	85 18 0	77 8 1	1027 19 10
21. Linlithgow,	16 16 0	15 12 6	23 0 9	19 17 0	75 6 3
22. Nairn, .	.....	.....	.....	.....	.....
23. Orkney, .	0 11 0	0 18 0	5 13 0	3 5 0	10 7 0
24. Peebles, .	6 15 1	7 13 8	16 4 4	3 1 5	33 14 6
25. Perth, .	40 19 9	48 4 2	61 7 8	57 12 0	208 3 7
26. Renfrew, .	86 11 2	70 12 4	21 2 4	23 15 5	202 1 3
27. Ross & Cromarty,	5 3 5	11 3 5	25 2 5	24 16 7	66 5 10
28. Roxburgh,	13 9 5	15 4 3	22 7 0	23 4 10	74 5 6
29. Selkirk, .	1 15 3	0 7 3	5 6 8	3 10 10	11 0 0
30. Stirling, .	89 6 7	66 19 6	60 19 9	55 5 2	272 11 0
31. Sutherland,	.....	6 1 7	3 2 9	2 13 1	11 17 5
32. Wigtown, .	19 6 7	22 16 11	13 7 10	19 15 0	75 6 4
33. Zetland, . .	.....	.....	10 10 5	13 15 6	24 5 11
	1402 8 4	1307 16 5	840 17 10	723 12 3	4274 14 10

Deduct—			
Sums overpaid on half-year ended 31st March to	Dumfries, .	£0 14 2	
Do.	Do. Peebles, . .	5 11 8	
Do.	Do. Roxburgh, .	8 7 6	
			14 13 4
			£4260 1 6

Note.—No Accounts have been rendered by the County of Caithness for the half-years ended 31st March and 30th September, 1860; and by the County of Kinross for the six half-years ended 31st March and 30th September 1858, 1859, and 1860; and by the County of Nairn for the three half-years ended 30th September 1859, 31st March and 30th September 1860.

Edinburgh, 2d January 1816.

No. XXII.—Abstract of Account of Expenses incurred by the General Board of Directors of Prisons in Scotland, through the Prison Boards of the several Counties, under Orders issued by the Secretary of State, in the conveyance of Convicts in charge of Escort Officers from Prisons in Scotland to Prisons in England, to the General Prison at Perth, and the re-conveyance of Officers to their Home, for the Year 1860.

	Prisons whence Removed.	Prisons to which Removed.	Convicts Removed		Employed in Service.		Railway Fares.	Allowances according to Rule.	Total.
			To Station Prisons.	To England.	No. of Officers.	No. of Days.			
1	Edinburgh,	Wakefield,	.....	6	2	3	£10 0 0	£6 0 0	
2	Edinburgh,	Ditto,	.....	15	3	3	21 0 0	7 15 6	
3	Edinburgh,	Ditto,	.....	14	3	3	20 0 0	8 5 6	
4	Edinburgh,	Ditto,	.....	8	2	3	12 0 0	3 11 0	
5	Edinburgh,	Ditto,	.....	10	2	3	14 0 0	6 17 0	
6	Edinburgh,	Ditto,	.....	2	1	3	*4 0 0	.....	
7	Glasgow,	Ditto,	.....	3	2	3	7 0 0	5 19 6	
8	Glasgow,	Ditto,	.....	18	4	3	26 0 0	11 3 3	
9	Glasgow,	Ditto,	.....	14	3	3	20 0 0	10 2 5	
10	Alloa to Edinburgh,	Ditto,	1	...	...	...	.....	2 12 0	
11	Forfar do.	Ditto,	1	...	...	...	.....	6 0 5	
12	Paisley do.	Ditto,	1	...	...	...	.....	2 2 8	
13	Stirling do.	Ditto,	1	...	...	...	.....	2 10 8	
14	Cupar do.	Ditto,	1	...	...	...	.....	2 12 4	
15	Dundee do.	Ditto,	6	...	...	...	.....	6 15 0	
16	Perth do.	Ditto,	3	...	...	...	.....	5 12 6	
17	Aberdeen do.	Ditto,	1	...	...	...	.....	6 3 10	
18	Dundee do.	Ditto,	2	...	...	...	.....	3 2 7	
19	Inverness do.	Ditto,	1	...	...	...	.....	5 6 8	
20	Perth do.	Ditto,	3	...	...	...	.....	5 3 6	
21	Aberdeen do.	Ditto,	3	...	...	...	.....	7 7 8	
22	Inveraray to Glasgow,	Ditto,	1	...	...	...	.....	4 13 0	
23	Dumbarton do.	Ditto,	1	...	...	...	.....	1 15 10	
24	Paisley do.	Ditto,	2	...	...	...	.....	2 18 8	
			28	90	22	27	£134 0 0	£124 11 6	£258 11 6
1	Edinburgh,	Millbank,	.....	5	...	...	†£8 15 0	.....	
2	Edinburgh,	Ditto,	.....	1	1	4	5 5 0	£3 9 6	
3	Edinburgh,	Ditto,	.....	8	2	4	21 0 0	7 15 0	
4	Edinburgh,	Ditto,	.....	4	1	4	12 8 0	5 10 6	
5	Glasgow,	Ditto,	.....	11	2	4	30 0 0	9 11 3	
6	Glasgow,	Ditto,	.....	10	3	4	33 19 8	10 15 10	
7	Glasgow,	Ditto,	.....	4	2	4	16 0 0	5 18 10	
8	Glasgow,	Ditto,	.....	6	3	4	24 0 0	9 14 9	
9	Stirling,	Ditto,	.....	2	2	4	‡8 0 0	5 6 8	
10	Wick,	Ditto,	.....	1	2	9	.....	§21 15 9	
11	Aberdeen to Edinburgh,	Ditto,	2	...	...	...	.....	5 3 5	
12	Dundee do.	Ditto,	3	...	...	...	.....	4 7 6	
13	Dunfermline do.	Ditto,	1	...	...	...	.....	2 3 6	
14	Jedburgh do.	Ditto,	3	...	...	...	.....	5 2 2	
15	Perth do.	Ditto,	1	...	...	...	.....	2 11 0	
16	Wigton to Glasgow,	Ditto,	1	...	...	...	.....	4 7 11	
17	Kirkcudbright do.	Ditto,	1	...	...	...	.....	4 17 11	
18	Paisley do.	Ditto,	1	...	...	...	.....	1 14 2	
19	Wick to Aberdeen,	Ditto,	1	...	...	...	.....	7 1 6	
			14	52	18	41	£159 7 8	£117 7 2	£276 14 10
1	Edinburgh,	General Prison,	.....	1	2	1	.....	£3 8 6	
2	Edinburgh,	Ditto,	.....	5	3	1	.....	5 17 10	
3	Edinburgh,	Ditto,	.....	5	3	1	.....	5 17 10	
4	Edinburgh,	Ditto,	.....	2	2	1	.....	4 2 8	
5	Glasgow,	Ditto,	.....	13	3	1	.....	10 3 2	
6	Glasgow,	Ditto,	.....	15	4	1	.....	12 5 8	
7	Aberdeen,	Ditto,	.....	5	3	1	.....	7 10 0	
8	Aberdeen,	Ditto,	.....	2	2	1	.....	4 19 0	
9	Ayr,	Ditto,	.....	1	2	1	.....	4 9 8	
10	Dunfermline,	Ditto,	.....	1	2	1	.....	3 1 9	
11	Dundee,	Ditto,	.....	7	3	1	.....	4 11 8	
12	Dundee,	Ditto,	.....	4	2	1	.....	3 16 4	
13	Forfar,	Ditto,	.....	1	2	1	.....	2 9 9	
14	Elgin,	Ditto,	.....	1	2	3	.....	6 17 3	
15	Paisley,	Ditto,	.....	1	2	1	.....	2 17 3	
16	Dingwall,	Ditto,	.....	1	2	3	.....	9 9 6	
17	Inverness,	Ditto,	.....	1	2	3	.....	7 9 9	
18	Stirling,	Ditto,	.....	1	2	1	.....	2 8 11	
19	Perth,	Ditto,	...	1	...	...	.....	1 3 0	
20	Inveraray to Glasgow,	Ditto,	1	...	...	...	.....	1 19 10	
21	Dumbarton do.	Ditto,	1	...	...	...	.....	1 16 4	
22	Paisley do.	Ditto,	1	...	...	...	.....	1 15 8	
			3	68	43	24	.....	£108 11 4	£108 11 4
									£643 17 8

* The "Allowances" to the Officer in charge are included in No. 11.
† These Convicts were picked up by the Car from Glasgow, and conveyed by Glasgow Officers.
‡ Only one Officer proceeded from Edinburgh to London.
§ Wick to London—Railway fares included.
Note.—Besides the expenses incurred as above, there was an account of £9, 13s. 2d. paid to the Governor of Wakefield Prison for conveying a Prisoner from Wakefield House of Correction to the General Prison at Perth.

No. XXIII.

STATES OF ACCOUNTS

OF THE

GENERAL BOARD OF DIRECTORS OF PRISONS.

I.—FUNDS UNDER THE ASSESSMENT FOR CONVERTING THE BUILDINGS AT PERTH INTO A GENERAL PRISON.

Receipts—being Charge.

1. Balance at credit, brought from last year's account,			£72 7 6
2. Interest accrued to 31st December 1859, viz. :—			
(1.) On arrears of Assessment under ℔ 35,	£0 7 0		
(2.) On sums at credit of this account,	0 19 0		
		1 6 0	
Amount of Charge,			£73 13 6

Expenditure—being Discharge.

2. Balance at the credit of this account, and carried to next account,	£73 13 6
Amount of Discharge,	£73 13 6

II.—FUNDS FOR EXPENSES OF THE GENERAL PRISON AT PERTH.

1. Current Expenses of the Establishment.

Receipts—being Charge.

1. Balance at credit brought from last year's account for defraying the current expenses of the General Prison, viz., £260, 19s. 4d., and £4081, 13s. 11d.,			£4,348 13 3
2. Outstanding Accounts for sales and work executed at the General Prison in 1859, and preceding years, given up in the Discharge of last account, and from thence transferred,			477 2 10
3. Cash received from the Queen's and Lord Treasurer's Remembrancer in Scotland, in full of Issues by the Lords Commissioners of Her Majesty's Treasury from Grants of Parliament for defraying the current expenses of the establishment of the General Prison :—			
20th March 1860,	£4628 0 0		
27th June ,,	3995 0 0		
25th September ,,	3338 0 0		
22d December ,,	3000 0 0		
		14,961 0 0	
4. Cash from Officers in the General Prison, in repayment of Income-Tax on their Salaries, viz. :—			
1st January 1860,	£23 5 0		
2d April ,,	9 7 7		
2d July ,,	19 4 4		
1st October ,,	19 4 4		
		71 1 3	
5. Cash received, being incidental receipts from the General Prison for the year 1859,			85 3 8
6. Proceeds of Labour of Prisoners in the General Prison in the year 1860, viz. :—			
(1.) Money received for sales and deliveries of Work,	£2,892 17 6		
(2.) Value of Materials, &c., issued for the use of the Prison in making and repairing shoes for prisoners and making furniture, fittings, and repairs; and in making and repairing imple-			
Carry forward,	£2,892 17 6	£19,943 1 0	

Expenditure—being Discharge.

1. Payments in 1860 on account of liabilities for expenses of the establishment of the General Prison, incurred for supplies, &c., during the year 1858,			£3,326 13 8
2. Current Expenses of the Establishment of the General Prison incurred in the year 1860, viz. :—			
(1.) Expenses paid during the year, including value of materials, &c., issued from the labour stores for Prison use, and labour of prisoners thereon, and on domestic Prison purposes,	£15,318 15 8		
(2.) Liabilities for expenses incurred for supplies, &c., during the quarter ended 31st December 1860, but not paid at its close,	3,407 7 4		
(3.) Expense of transmission of prisoners unpaid at close of the year,	235 13 6		
Sum,	£18,961 16 6		
The Classification of the several articles of these expenses is as follows :—			
1. Salaries and Wages of Officers,	£5,755 8 1		
2. Uniform of Officers,	189 14 8		
3. Prison Diet,	4,723 7 1		
4. Contingent alimentary charges,	252 3 1		
5. Medicines,	121 14 10		
6. Clothing,	909 15 8		
7. Bedding,	427 1 0		
8. Lighting Prison,	324 0 0		
9. Lighting Officers' Houses and Outhouses,	116 2 8		
10. Fuel,	813 6 0		
Carry forward,	£13,632 12 9		£3,326 13 8

	Brought forward,	£2,892	17	6	£19,943	1	0
	ments of labour, included in the Discharge,	832	19	8[11]			
(3.)	Value of labour of prisoners on materials, &c., issued for Prison use, and in domestic Prison services, included in the Discharge,	718	7	0[1]			
(4.)	Account for sales and deliveries of work outstanding at 31st December 1859,	624	8	2			
					5,068	12	5
7.	Interest accrued on funds £25, 5s. 5d., and £36, 1s. 9d.,				61	7	2
8.	Amount of Liabilities for expenses of the General Prison, incurred for supplies, &c., during the year ending 31st December 1859; but not paid at its close, included in the Discharge hereof,				3,407	7	4
9.	Expense of transmission of prisoners from Local Prisons unpaid at close of the year,				235	13	6
	AMOUNT OF CHARGE,				£28,716	1	5

	Brought forward,	£13,632	12	9[8]	£3,326	13	8
11.	Cooking and Washing,	320	4	3			
12.	Materials for work and carriage of Goods,	2,931	11	4			
13.	Implements of Labour,	133	9	3[6]			
14.	Gratuities to well-conducted prisoners,	325	5	2			
15.	Subsistence to destitute prisoners on liberation,	17	2	0			
16.	Transmission of prisoners from Local Prisons,	407	11	1			
17.	Travelling expenses of prisoners to their usual place of residence,	213	12	7			
18.	Clothing for prisoners on liberation,	163	12	6			
19.	Furniture, Fittings, and Utensils,	243	18	0[3]			
20.	Prison services not otherwise classified,	171	11	8			
21.	General contingent charges,	401	5	9[8]			
	Sum,				18,961	16	6
3.	Payment to the Queen's and Lord Treasurer's Remembrancer in Exchequer, as profit arising on the labour of Convicts during the year ended 31st December 1860,				709	11	2
4.	Payments on account of the expenses of Feu-duty for the additional ground for the new Wing, and House-rents for Chaplain and other officers,				188	0	0
5.	Payments for Income-Tax on Salaries of Officers,				71	1	3
6.	Loss on outstanding accounts stated in charge hereof, being abatements allowed at settlement of accounts incurred in 1859,				1	1	0
7.	Value of goods returned by purchasers and employers on accounts incurred in 1859,				3	1	0
8.	Outstanding accounts for sales and deliveries of work at the General Prison, as at 31st December 1860, carried to next account,				680	11	5
9.	Balance at credit of this account carried to next account, viz., £3425, 15s. 8d., in the hands of the Board, and £1348, 9s. 9d., in the hands of the Governor of the General Prison,				4,774	5	5
	SUM OF DISCHARGE,				£28,716	1	5

2. EXPENSES OF ORDINARY AND SPECIAL WORKS.

Receipts—being Charge.

1.	Balance in hands of General Board, brought from last account,				£1,402	10	2
2.	Cash received from the Queen's and Lord Treasurer's Remembrancer in Scotland in full of Issues by the Lords Commissioners of the Treasury, from grants of Parliament for defraying the expenses of ordinary works and repairs and special works, viz.:—						
	25th January 1860,	£1207	13	8			
	9th March „	1510	0	0			
	22d June „	1000	0	0			
	25th July „	568	16	7			
					4,286	10	3
3.	Interest on Deposits on funds for New Buildings and Special Works,				7	9	5
	AMOUNT OF CHARGE,				£5,696	9	10

Expenditure—being Discharge.

1.	Payments for Ordinary and Special Works,	£5,344	7	1	
2.	Balance in hands of Board, carried to next account,	352	2	9	
	AMOUNT OF DISCHARGE,				£5,696 9 10

III.—FUNDS FOR CURRENT EXPENSES OF THE GENERAL BOARD AND MISCELLANEOUS PURPOSES.

Receipts—being Charge.

1. Balance at credit brought from last year's account,		£47 4 11
2. Cash received from the Queen's and Lord Treasurer's Remembrancer in full of Issues by the Lords Commissioners of Her Majesty's Treasury, to defray the expenses of the General Board, viz. :—		
3d Jan. 1860,	£160 0 0	
2d April „	50 0 0	
		210 0 0
3. Cash received from the Queen's and Lord Treasurer's Remembrancer as Imprests for defraying the expense of removal of convicts from Prisons in Scotland to the General Prison at Perth, and to Convict Establishments in England, viz. :—		
Balance at credit from last account,	£457 9 7	
2d April 1860,	300 0 0	
4. Cash received, rent of dwelling-house sublet,	15 0 0	
5. Interest accrued on Funds, viz. :—		
For expenses of General Board,	2 5 0	
For expenses of removal of convicts,	8 0 4	
		782 14 11
6. Balance due by Treasury on Board's Expenses Account,		29 7 8
AMOUNT OF CHARGE,		£1,069 7 6

Expenditure—being Discharge.

1. Payments of current Expenses of the General Board incurred in the year 1859, viz. :—		
(1.) Board's Chambers, &c. :—		
Rent,	£75 0 0	
Public and Municipal burdens,	6 5 9	
Postages, parcels, coals, water, gas, small repairs, and petty charges,	73 2 10	
(2.) Expenses of Directors and Secretary incurred in visiting the General Prison, &c.,	46 4 8	
(3.) Law Agents for professional services relating to the General Prison at Perth,	71 6 4	
(4.) Architect,	21 2 0	
(5.) Payments to temporary clerk,	10 16 0	
		£303 17 7
2. Payments of Expenses incurred in the removal of Convicts to the General Prison and to Prisons in England,		641 6 2
3. Balance at credit of this account carried to next account, viz. :—		
For removal of convicts,		124 3 9
AMOUNT OF DISCHARGE,		£1,069 7 6

IV.—FUNDS FOR BUILDING, ALTERING, AND REPAIRING LOCAL PRISONS.

Receipts—being Charge.

1. Balance at credit of account ended 31st December 1859, viz. :—		
(1.) Arrears of assessment and interest thereon,	£2962 17 8	
(2.) Cash in Bank,	8556 16 2	
		£11,519 13 5
2. Amount of Twentieth year's assessment on the different Counties for building, altering and repairing Local Prisons, as amended, and continued payable 15th December 1860,		4,889 0 5
3. Amount of additional assessment under the Statutes for the year 1859 on the County of Renfrew,		698 16 6
4. Cash paid in to Local Prisons' Account with Bank,	£172 10 1	
5. Interest accrued on funds in Local Prisons' account,	179 17 8	
		352 7 9
6. Cash due to Local Boards on special credits to the following Counties, viz. :—		
Banff,	£18 2 7	
Clackmannan,	44 7 8	
Edinburgh,	2796 12 6	
Kirkcudbright,	1351 9 5	
Lanark,	329 9 5	
Renfrew,	668 10 5	
Sutherland,	97 11 10	
		5,306 3 10
		£22,766 1 11

Expenditure—being Discharge.

1. By amount of assessments received from County Boards, and paid into Bank,		£2,115 17 6
2. By retentions and payments into Banks by County Boards to special credits,		1,462 2 6
3. Retentions by County Boards,		307 15 10
4. By Cash due by Bank on special credit accounts to Counties as on other side,		5,306 3 10
5. By cash drawn from Local Prisons' account, and remitted to County Boards,		350 0 0
6. Balance at 31st December 1860 carried to next account, Arrears of assessment for 1860, and preceding years, viz. :—		
Ayr,	£434 5 10	
Bute,	47 18 4	
Caithness,	121 5 10	
Clackmannan,	0 9 11	
Elgin,	105 17 11	
Fife,	0 11 9	
Kinross,	103 2 7	
Kirkcudbright,	26 5 0	
Orkney and Zetland,	669 5 1	
Orkney,	394 2 4	
Peebles,	35 9 2	
Renfrew,	1382 11 2	
Ross and Cromarty,	954 2 3	
Roxburgh,	7 0 0	
Stirling,	382 6 2	
		4,664 18 4
Cash at debit of the Bank of Scotland in the Board's account for Local Prisons,		8,559 3 11
		£22,763 1 11

General Balance Sheet of the Cash Transactions of the
from 31st December 1859

THE GENERAL BOARD DEBTOR.

		£	s.	d.
I.	To Surplus Funds upon Account for Building, Furnishing, and completing the General Prison,	73	13	6[a]
II.	To the Lords Commissioners of Her Majesty's Treasury— For defraying the Charge of the General Prison, viz., £1318, 9s. 1d., and £30, 0s. 8d.,	1,348	9	9
III.	To the Lords Commissioners of Her Majesty's Treasury, for Current Expenses of the General Prison,	3,425	15	8
IV.	To the Lords Commissioners of Her Majesty's Treasury, for Special Works at General Prison,	352	2	9
V.	To the Queen's and Lord Treasurer's Remembrancer, for Expenses of removal of Convicts,	124	3	9
VI.	To the Lords Commissioners of Her Majesty's Treasury, for outstanding Accounts for Sales and Deliveries of Work at the General Prison,	680	11	5
VII.	To Sundries for Liabilities for the Expenses of the General Prison, prior to, and unpaid at, 31st December 1860,	3,407	7	4
VIII.	To County Prison Board's Accounts for building Local Prisons, viz.:—			
	Ayr, £434 5 10			
	Banff, 18 2 7			
	Bute, 47 18 4			
	Caithness, 121 5 10			
	Clackmannan, 44 17 7			
	Dumbarton, 0 9 3			
	Dumfries, 225 12 6			
	Edinburgh, 2796 12 6			
	Elgin, 105 17 11			
	Fife, 0 11 9			
	Forfar, 2865 5 1			
	Inverness, 414 6 11			
	Kinross, 108 7 7			
	Kirkcudbright, 1377 14 5			
	Lanark, 402 7 7			
	Nairn, 150 11 2			
	Orkney, 1573 8 1			
	Orkney and Zetland, 799 12 5			
	Peebles, 35 9 2			
	Renfrew, 2051 1 7			
	Ross and Cromarty, 954 2 3			
	Roxburgh, 7 0 0			
	Selkirk, 1 17 7			
	Stirling, 2445 5 2			
	Sutherland, 97 11 10			
	Zetland, 1455 11 2			
		18,530	6	1
IX.	To the Lords Commissioners of Her Majesty's Treasury, for Stock on hand for General Prison purposes at 31st December 1860, viz.:—			
	Manufactured Goods, Material for Work, and Implements of Labour, £1577 13 5			
	Clothing, Bedding, and Stores, 174 12 2			
	Sum,	1,752	5	7
		29,694	15	10[c]

GENERAL BOARD OF DIRECTORS OF PRISONS IN SCOTLAND,
to 31st December 1860.

THE GENERAL BOARD CREDITOR.

	£	s.	d.
I. By Bank of Scotland—Balance on General Deposit Account,	50	16	5
II. By Bank of Scotland—Balance on Account for Expenses of Board,	86	4	8
III. By Bank of Scotland—Balance on Account for Public Monies,	3,777	18	5
IV. By Sundries for Outstanding Accounts and Deliveries of Work at the General Prison, at 31st December,	680	11	5
V. By the Lords Commissioners of Her Majesty's Treasury for Liabilities for Expenses of the General Prison, unpaid at 31st December,	3,407	7	4
VI. By Governor of General Prison on Account relative to Receipts and Expenditure at General Prison for 1859 :—			
In Bank of Scotland at Perth, £1318 9 1			
In hands of the Governor, 30 0 8			
Sum,	1,348	9	9
VII. By Bank of Scotland—for Surplus Deposits in Special Credit-accounts for building Prisons in the following Counties, viz. :—			
Clackmannan, £44 7 8			
Kirkcudbright, 1351 9 5			
Lanark, 329 9 5			
Renfrew, 668 10 5			
Sutherland, 97 11 10			
Sum,	2,491	8	9
VIII. By National Bank of Scotland—for Surplus Deposits on special Credit-account for building Prisons in Banffshire,	18	2	7
IX. By Bank of Scotland—for Surplus Deposits for building Prisons in County of Edinburgh,	2,796	12	6
X. By Bank of Scotland—Balance on Local Prisons' Account,	8,559	3	11
XI. By the Lords Commissioners of Her Majesty's Treasury for advances on account of Board Expenses,	29	7	8
XII. By Secretary, Balance on Cash Book,	8	11	5

XIII. By County Prison Boards, for Arrears of Assessments, viz. :—

	Under Sec. 35.	Under Sec. 36.	TOTAL.
Ayr,	£0 0 2	£434 5 10	£434 6 0
Bute,	...	47 18 4	47 18 4
Caithness,	...	121 5 10	121 5 10
Clackmannan,	0 1 4	0 9 11	0 11 3
Elgin,	...	105 17 11	105 17 11
Fife,	0 1 8[6]	0 11 9	0 13 5[6]
Kinross,	6 15 7	103 7 7	110 3 2
Kirkcudbright,	2 13 0	26 5 0	28 18 0
Nairn,	13 3 9	...	13 3 9
Orkney and Zetland,	...	669 5 1	669 5 1
Orkney,	...	394 2 4	394 2 4
Peebles,	0 0 10	35 9 2	35 10 0
Renfrew,	...	1382 11 2	1382 11 2
Roxburgh,	...	7 0 0	7 0 0
Ross and Cromarty,	...	954 2 3	954 2 3
Stirling,	...	382 6 2	382 6 2
Wigtown,	0 0 9	. .	0 0 9
	22 17 1[6]	4664 18 4	4,687 15 5[6]

XIV. By Governor of General Prison for Stock on hand for General Prison purposes at 31st December 1860, viz. :—			
Manufactured Goods, Materials for Work, and Implements of Labour, £1577 13 5			
Clothing, Bedding, and Stores, 174 12 2			
Sum,	1,752	5	7
	29,694	15	10[6]

LICENSING SYSTEM (SCOTLAND).

COPY of REPORT by HER MAJESTY'S COMMISSIONERS for inquiring into the LICENSING SYSTEM, and SALE and CONSUMPTION of EXCISABLE LIQUORS in *Scotland*.

To the Queen's Most Excellent Majesty.

Subjects of inquiry.

THE subjects into which we were directed by Your Majesty to inquire, are the laws regulating the sale and consumption of excisable liquors in Scotland, and the system under which certificates, by justices of the peace and magistrates, and licenses are granted for the sale of such liquors.

And we were directed to report whether, in our opinion, any alterations, and if any, what alterations ought to be made in the said laws and system.

Course of proceeding adopted.

In discharge of the duties thus committed to us by Your Majesty, having carefully considered the provisions of the statutes at present in force on the subject of our inquiry, we proceeded to receive deputations from various associations of persons, who were either desirous of supporting the existing law, or were anxious to appear before us as complainers and objectors against its operation. The former of these classes was represented by the Society for the Suppression of Drunkenness, the Glasgow Association for Defence of the Public Houses Acts, the Scottish Temperance League, and the Glasgow Abstainers' Union; the latter by the Licensed Victuallers' Association, and a joint committee of distillers, brewers, and wholesale and retail spirit dealers. The object of all these deputations was principally to impress upon us the expediency of conducting our proceedings in public. But we also received from them statements which, embodying their respective views on the subject of the inquiry, were of material assistance to us in our subsequent investigations.

Being desirous to possess accurate statistical information regarding the past and present operation of the laws regulating the sale and consumption of spirits, we endeavoured to obtain returns on the subject from each burgh and county in Scotland. We regret, however, to state, that in very few instances have the records been kept with sufficient accuracy or minuteness to afford the information desired, in a satisfactory form; and although some of the returns which we received suggested important considerations, they are not sufficiently complete to form any part of this report.

In default of the information which we thus failed to obtain from official returns, the conclusions to which we have come are founded principally on oral evidence taken in different parts of Scotland. We held sittings for that purpose in Edinburgh, Glasgow, Inverary, Greenock, Ayr, Dumfries, Dundee, Perth, Aberdeen, and Inverness, and examined witnesses resident in these towns and the adjacent counties. The witnesses so examined were—First, persons engaged in the spirit trade, or selected by the trade, to state any objections to the existing law or practice; secondly, persons suggested to us by associations formed to maintain or increase the restrictions on the sale of spirits; and, thirdly, persons whom, from their official position, professional employment, or otherwise, we considered likely to afford important information or suggestions. Ample opportunities were also given to any one to come before us who thought that he had anything of importance to communicate; and of these opportunities advantage was taken in many instances.

The amount of evidence collected is certainly considerable, and may be thought disproportionate to the variety of matters which it embraces; but it must be borne in mind that the subject is one which has created great interest and much discussion throughout Scotland. It seemed desirable to ascertain how far the operation and administration of the law had been the same in different districts; and although most of the points on which we have any remarks to offer are adverted to in the evidence taken in Edinburgh and Glasgow, an investigation confined to the large towns would not have satisfied the public mind, nor have afforded a safe basis for any general conclusions.

Present state of the law.

The laws at present in force for regulating the sale and consumption of excisable liquors in Scotland are—the Act 9 Geo. 4, c. 58, entitled, "An Act to regulate the granting of certificates by justices of the peace and magistrates, authorising persons to keep common inns, alehouses, and victualling houses in Scotland, in which ale, beer, spirits, and other exciseable liquors may be sold by retail under excise licenses, and for the better regulation of such houses; and for the prevention of such houses being kept without such certificate;" and the Act 16 & 17 Vict. c. 67, entitled, "An Act for the better regulation of public-houses in Scotland."

Act 9 Geo. 4, c. 58.

Under the Act 9 Geo. 4, c. 58, the law of Scotland as to granting publicans' certificates is very similar to that of England, as regulated by the Act 9 Geo. 4, c. 61.

The justices of the peace in counties and the magistrates in burghs are required to hold two meetings in each year (limited within a period of eight days), at which they shall grant certificates "To such and so many persons as they shall think meet and convenient to keep common inns, alehouses, or victualling houses, within which ale, beer, spirits, wine, and other excisable liquors may, under Excise licenses, be sold by retail to be drunk or consumed on the premises." Such certificates are in force for one year, and no longer, and require to be renewed annually on written or printed application. The justices and magistrates respectively have power to make regulations and rules "as to the manner of making such applications, as well for ascertaining the character of the applicants, as whether it is expedient to grant such certificates in the places in which they are sought to be obtained."

No Excise license for the sale of excisable liquors by retail, to be drunk or consumed on the premises, can be granted to any person unless he shall have obtained a certificate. But on the death or removal from the licensed premises of the person by whom a certificate has been obtained, a transfer of the certificate (available till the next meeting of the Licensing Court) may be granted by any two justices or magistrates to the representatives of such person, or the new tenant of the house.

An appeal from the decision of the justices or magistrates, in granting or refusing a certificate, may be taken by any justice of the peace, or the proprietor or occupier of any house in respect of which a certificate has been applied for. This appeal lies to the next quarter sessions of the county.

Various penalties are prescribed for breaches of the terms of certificate, or for selling excisable liquors without a certificate. Power to sue for these penalties is given to any person who "will inform and prosecute for the same." And the penalties are divisible at the discretion of the convicting magistrate, in the proportion of not more than one-half to the prosecutor, and the remainder to charitable purposes.

Act 16 & 17 Vict. c. 67.

The Act 16 & 17 Vict. c. 67, makes no change in these provisions of the earlier law; but in other respects it has introduced several alterations, to the more important of which it is necessary to advert.

1. There is an express prohibition (not contained in the former Act) against granting a certificate for excisable liquors to be drunk on the premises, "unless on the express condition that no groceries or other provisions to be consumed elsewhere shall be sold in the house or premises with respect to which such certificate is granted." Grocers are allowed to obtain certificates for the sale of liquors by retail, but not to be consumed on the premises.

2. Under the Act 9 Geo. 4, c. 58, no distinction was drawn between the different classes of houses in which the trade of a spirit-dealer may be carried on. They were all designated as "common inns, alehouses, or victualling houses;" and among the restrictions under which the keepers of them were all alike laid by their certificates was, "that they do not keep open house, or permit or suffer any drinking or tippling in any part of the premises thereunto belonging, during the hours of Divine service on Sundays or other days set apart for public worship by lawful authority, nor keep the same open at unseasonable hours." By the existing law there is a classification of licensed premises into (1) inns or hotels; (2) public-houses; and (3) grocers and provision dealers' shops. On all these classes of houses restrictions are imposed, applicable not merely to the hours of Divine service, but to the whole of Sundays; and instead of the general prohibition

prohibition against "unseasonable hours," the hours for opening and closing are expressly fixed.

A hotel-keeper is bound by his certificate not to "keep open house, or permit or suffer any drinking in any part of the premises belonging thereto, or sell or give out therefrom any liquors before 8 o'clock in the morning or after 11 o'clock at night of any day, with the exception of refreshment to travellers or persons requiring to lodge in the said house or premises," and not to "open his house for the sale of any liquors, or sell or give out the same on Sunday, except for the accommodation of lodgers and *bonâ fide* travellers."

The keeper of a public-house is under precisely the same restrictions, without the exceptions in favour of travellers and lodgers.

In localities requiring other hours for opening and closing hotels and public-houses than those above-named, the justices or magistrates may fix such other hours, not being earlier than 6 o'clock or later than 8 o'clock in the morning for opening, or earlier than 9 o'clock or later than 11 o'clock in the evening for closing.

A grocer or provision dealer is, in addition to the prohibition of Sunday opening, and that already mentioned as to the sale of liquors to be consumed on the premises, forbidden "to sell or give out therefrom any liquors before 6 o'clock in the morning, or after 11 o'clock at night of any day."

3. A single certificate was formerly sufficient to entitle a person to keep a house for the sale of all such liquors as he should be licensed by the Excise to sell. But now separate certificates are required for obtaining a license to sell porter, ale, and beer, and for obtaining a wine and spirit license.

4. In addition to the provision empowering the justices or magistrates to make regulations regarding applications for certificates, it is enacted, that such certificate shall not be granted with respect to any house not previously licensed for the sale of liquors to be consumed on the premises, without a written report from a justice of the peace of the county, or magistrate of the burgh, that the premises are "suitable and proper to be licensed in terms of the certificate applied for," and setting forth the name of the owner of the house, accompanied with a certificate as to the applicant's character and qualification, signed by two such justices or magistrates.

5. By the Act 16 & 17 Vict. c. 67, power is for the first time in Scotland given to the police "at any time to enter into any public-house, or any house where refreshments are sold to be consumed on the premises," and penalties are awarded against any person refusing to admit them, or obstructing their admission thereto.

Improvement in habits of the people.

Such being the present state of the law on the subject of our inquiry, various suggestions were made to us for its alteration and amendment. Before noticing these, or stating the particular conclusions at which we have arrived, we feel bound to advert to the important fact, which was fully established by the evidence given before us, that there has been of late years a marked improvement in the habits of the people of Scotland in regard to sobriety. The number of cases of intoxication, and offences arising therefrom, appear to have greatly diminished; and although intemperance still prevails to a lamentable extent, it would seem that this vice has been for some time gradually descending in the scale of society, and that it is now chiefly confined to the lowest class of the population.

Causes of improvement.

Various causes have, in our opinion, contributed to this result. There can be little doubt that the increase of the duty on exciseable liquors has had a considerable effect. It is well known that there was in Scotland a great and sudden increase of intemperance consequent on the reduction of the spirit duty in 1823 from 6 *s.* 2 *d.* to 2 *s.* 4 $\frac{3}{4}$ *d.* per Imperial gallon. Between 1823 and 1853, the duty had been raised to 3 *s.* 8 *d.* per gallon. In 1853, it was made 4 *s.* 8 *d.*, in 1854, 6 *s.*, and in 1855, 8 *s.*, at which rate it now continues. The consequence of this increase of duty has necessarily been an increase of the price, which may probably be one cause of the diminished consumption, as appearing from the following return, furnished by the Excise to the House of Commons in 1859:

NUMBER of GALLONS of SPIRITS consumed in *Scotland*.

	British.	Foreign.	Colonial.	TOTAL.
	Gallons.	*Gallons.*	*Gallons.*	*Gallons.*
Year ending 5th January 1850 -	6,935,003	118,523	250,115	7,303,641
Ditto - ditto - 1851 -	7,122,987	87,975	201,225	7,412,187
Ditto - ditto - 1852 -	6,830,710	80,301	179,883	7,090,894
Ditto - ditto - 1853 -	7,172,015	83,909	181,538	7,437,462
Ditto - ditto - 1854 -	6,534,648	91,690	169,190	6,795,528
Period of 5 years, ending 5th January 1854 - - - - -	34,595,363	462,398	981,951	36,039,712
Year ending 31st December 1854 -	6,553,239	107,044	148,536	6,808,819
Ditto - ditto - 1855 -	5,178,270	77,508	114,640	5,370,418
Ditto - ditto - 1856 -	5,368,052	81,546	145,158	5,594,756
Ditto - ditto - 1857 -	5,575,171	79,980	141,555	5,796,706
Ditto - ditto - 1858 -	5,301,056	65,706	141,727	5,508,489
Period of 5 years, ending 31st December 1858 - - - -	27,975,788	411,784	691,616	29,079,188

This diminished consumption of spirits is the more worthy of remark, when it is recollected that within the last eight years the population of Scotland has increased by upwards of 250,000 ; namely, from 2,888,742 by the census of 1851, to 3,139,860, its present estimated amount.

We are, however, led by the evidence given before us, to attribute to other causes, besides the increase in the price of spirits, the decided change for the better which has taken place among the working classes in all parts of the country. The zealous labours of the churches, of all denominations, in supporting home missions and other similar agencies, have been attended with most beneficial results. The spread of education and the extension of a cheap literature, adapted to the wants and requirements of the people, aided by the establishment of lectures, reading-rooms, and schemes of rational recreation, have done much to withdraw the operatives from the public-house. Benefit has also resulted from the practice (which it is to be wished were more general) of paying the wages of workmen at other times than on Saturday afternoons, and from the keepers of provision stores in connexion with public works having in many instances ceased to sell spirits. Nor do we undervalue the effects which have been produced by the exertions of temperance and total abstinence societies, in reclaiming many persons from confirmed habits of drinking, and in preventing a still larger number from acquiring them.

Beneficial operation of recent legislation.

To ascertain how far recent legislative restrictions on the sale of intoxicating liquors have operated in the same direction, was one of the objects of our inquiry. That these restrictions have done so there can be no doubt. The beneficial effect of the Act 16 & 17 Vict. c. 67, is proved by the evidence which we received as to the diminution of crime, and the change for the better in the habits of the people, immediately after the passing of the Act, when its provisions were strictly enforced, and by the tendency in an opposite direction which in some places has followed its less rigorous enforcement during the last two years. In some towns there has been on the part of the magistrates great remissness in administering the law. The result seems to have been, if not an increase of crime in these places, at least the absence of the improvement witnessed elsewhere. The evidence given before us on this subject is corroborated by the report of Colonel Kinloch, the Inspector of the Constabulary of Scotland, for the year ending 15th March 1859, wherein it is stated (p. 37), with reference to the burgh of Dumfries : " The innumerable cases of 'drunk and disorderly,' 'drunk and incapable,' and crimes committed under the influence of drink, are attributable, I think, to the fact that the police are not allowed to look after the public-houses, or carry out the Act commonly called the Forbes Mackenzie Act.' " While, however,

however, the operation of the Act of Parliament in question has been thus beneficial, the improvement in the habits of the people to which we have adverted, must not be attributed too exclusively to its provisions. Indeed, the favourable reception which most of these provisions have met with from the people of Scotland generally, is in itself a proof of an improved state of moral feeling on the subject.

The principal objections stated before us to the provisions or administration of the existing law, and the conclusions at which we have arrived, may be stated as relating first to the system under which certificates for license are granted; secondly, to the regulation of licensed houses; and thirdly, to the prevention of illicit traffic.

Objections stated to licensing system.

I. The following objections were stated to the constitution and practice of the licensing courts:—

(1.) That the justices of the peace and burgh magistrates are not the persons to whom the duty of granting or refusing certificates for license ought to be entrusted, and that their powers in the matter are too extensive, and are liable to be administered capriciously.

(2.) That justices and magistrates who have sat in the original licensing courts sit also in quarter sessions as judges on appeals from their own decisions. That the Appeal Court is too numerous and fluctuating a body, and that its decisions are consequently wanting in that uniformity which is necessary to secure public confidence. That from the nature and constitution of the court much canvassing of the members takes place, with the view of securing the attendance of justices likely to be favourable or otherwise to applicants, or known to hold decided opinions on one side or the other in regard to the administration of the law; and that the decisions generally depend on which side has the majority of persons holding these extreme opinions.

(3.) That great inconvenience is experienced from the necessity of applying annually for renewal of their certificates by persons against whom no grounds of complaint exist.

(4.) That a person who has obtained a certificate for a spirit license is obliged to obtain an additional certificate to enable him to sell porter, ale, or beer.

(5.) That no notice is given, by advertisement or otherwise, of intended applications for new licenses, and that no opportunity is afforded to owners or occupiers of property in the neighbourhood, to state any objections to the granting of such applications.

(6.) That the time prescribed for the transaction of the business of the Licensing Court is so limited as to preclude the possibility of full justice being done to the cases.

No person to sell without a license.

1. We are clearly of opinion, and, indeed, it seems to be generally admitted, that no person should be allowed to sell intoxicating drinks without a license. But it is a matter of considerable difficulty to determine what is the most fitting tribunal to be invested with the power of granting or withholding the certificates on which such licenses are granted, and deciding on the number and character of houses to be licensed in any particular town or district. The suggestion most frequently made to us on this subject by those who object to the present state of the law was, that the duty should be discharged by the sheriff, or by a stipendiary magistrate specially appointed for the purpose. After, however, giving to the question every consideration, we are of opinion that it is not expedient to transfer to any other tribunal the power of granting certificates at present vested in the justices of the peace in counties, and the magistrates in burghs. These persons have, from their local knowledge, the best means of ascertaining the character of the applicants, and the wants of the district. As they are more or less responsible for the peace and good order of the town or county, they appear to us to have the greatest interest in the manner in which public-houses are conducted. Nor should it be forgotten that in burghs, where chiefly complaints were made to us against the licensing courts, the magistrates owe their seats to popular election, and may thus be held, on a social question, to represent public opinion. Unless, therefore, the Legislature should consider it expedient to change the licensing system generally throughout the United Kingdom, there does not seem, from

Justices and magistrates to continue to grant certificates.

from the evidence which we received as to the manner in which the powers in question have been exercised of late years, to be any sufficient reason for recommending an alteration in this respect in Scotland.

Limit on number of public-houses.

One of the most delicate duties laid upon a licensing court, and which most readily exposes its members to the charge of partiality, is the power of limiting the number of public-houses in any particular district. A case may occur in which one additional public-house is, in the opinion of the licensing magistrates, sufficient for the wants of the locality; but a certificate is applied for by several persons, all of unimpeachable character. In such circumstances the disappointed applicants and their friends are very apt to ascribe the selection of the successful candidate to motives of private interest.

As a remedy for this possible abuse of authority, it was suggested by some of the witnesses that there should be no limitation on the number of licensed houses, but that every person of respectable character should be entitled to obtain a certificate, the sale of spirits being regulated, like any other branch of trade, simply by the rules of supply and demand. On this suggestion we have to observe, that though, as regards other trades, no evils may arise to the public from unlimited competition, and consequent increased consumption, a wide distinction may be drawn in respect to the sale of intoxicating liquors. Legislative enactments may be quite ineffectual to reclaim confirmed drunkards, or even materially to diminish the consumption of ardent spirits; but it would not certainly be a wise policy to adopt any measure which would have a tendency to stimulate that consumption. If competition in the sale of spirits be carried to an extreme point, the friends of each publican will probably use their influence to persuade their acquaintances to become his customers, and to drink something "for the good of the house," as it is called; and other inducements will be held out by the publican himself, which may lead into drinking habits persons who might otherwise never have entered a public-house. It appears, too, that the multiplication of public-houses in a locality presents a temptation, which it is impossible for a certain class of persons to resist. Accordingly, the expediency of placing some limitation on the number of such houses has been generally acknowledged by those who have paid any attention to the subject.

The Select Committee of the House of Commons on Public-houses (Scotland), in 1846, came to the following resolution:—"That the number of houses in which spirits are sold for consumption on the premises is excessive, and ought to be restricted; and, in particular, that the number of such houses of inferior class is excessive, and productive of evil, and that it would be expedient to repress the evil arising therefrom." The Report of that Committee seems to have drawn the attention of justices and magistrates to the great facility with which licenses for the sale of spirits to be consumed on the premises were at that time obtained. Resolutions accordingly appear to have been adopted, and steps taken in several districts to reduce the number of public-houses, especially those of an inferior description. These measures were in operation in some counties and towns, to a considerable extent, before the passing of the Act 16 & 17 Vict.; and the result appears to have been beneficial. Evidence to this effect, specially applicable to East Lothian and the city of Glasgow, was given by the chief officers of police of these places; and in Glasgow the diminution has been going on since the passing of the Act, and with the same beneficial effects. It was not alleged before us, that in any part of Scotland the number of public-houses has been diminished to such an extent as to be inadequate to the wants of the population. We cannot therefore concur with the opinion expressed in the second Report of the Commissioners of Inland Revenue in 1858 (p. 17), to the effect that in Edinburgh and Glasgow the restrictions on the number of licensed houses "have increased the evils which they were intended to remedy, by bringing into existence innumerable unlicensed spirit shops, with all their attendant train of demoralising influences." The subject of these unlicensed houses, and the causes to which their existence may be attributed, will be considered in a subsequent part of this report.

Assuming, then, that there should be some limitation in the number of public-houses, it was suggested to us, as one mode of restricting the discretionary power of the licensing magistrates in the matter, that the number should be made dependent on population. It would, however, be extremely difficult to fix upon any proportion which would afford a safe rule at once for rural and urban districts, or for different parts of the same town.

Another

Another recommendation was made, to the effect that a minimum value should be fixed, below which no house should be licensed, and that such minimum value should vary according to the population of the place where the house is situated. We are inclined to think that such a regulation might have the effect of ensuring that all licensed houses were of a certain degree of respectability. We prefer the criterion of value to that suggested by the Select Committee of the House of Commons in 1854, who recommended, in reference to England, that the amount to be paid for a license should vary according to the population of the district, from L. 6 in rural parishes and small towns, to L. 30 in large cities. At the same time, the increased value which we are disposed to require as a condition of obtaining a certificate, would, under the existing law, necessarily involve higher licenses.

Minimum value for licensed houses varying with population of place.

Besides the selection of the houses to be licensed, and the limitation of their number, another matter in regard to which it was represented to us that the licensing courts act capriciously, is the making of regulations regarding the nature of the premises, and their suitableness for their proposed purpose. Complaints were made by many publicans of a regulation prohibiting them from having in their licensed premises, back doors opening into a different street from the principal entrance to the house, or into a stair leading to other dwelling houses. It appeared to us, however, that in every case where such a complaint was urged, there were sufficient grounds for the regulation in question, the object of which is to prevent facilities for contravention of the law regarding the hours and mode of conducting business in licensed houses. On the whole, we see no cause to recommend, either that justices and magistrates should be deprived of the power conferred on them by the Act 9 Geo. 4, c. 58, to make such regulations as they shall think fit, not being inconsistent with the statutes by which all their proceedings must be regulated, or that the written report as to the suitableness of the premises, which the Act 16 & 17 Vict. c. 67, prescribes in the case of new applications for license, should be dispensed with.

Magistrate's power to make regulations.

Inspection and report as to suitableness of premises.

2. While we are of opinion, as already stated, that the original court for granting certificates should remain unchanged, we think that the evidence, especially that applicable to some parts of the country, establishes, that the objections taken to the nature and constitution of the appeal courts are well founded. We therefore recommend, that in order to secure greater individual responsibility, and a greater uniformity in the principles by which decisions are regulated, the appeals from the licensing courts, which are taken at present to the Quarter Sessions, should be heard and decided by a limited committee of justices of the peace specially named for that purpose. The appointment of an appeal court of this character was strongly recommended by many of those by whom the unsatisfactory working of the present system was pointed out. Nor is the suggestion a new one. The same recommendation was made by some of the witnesses of the greatest information, and whose opinions were entitled to most weight, who were examined before the Select Committee of the House of Commons in 1846. And a provision of a similar nature was contained in a Bill for the Regulation of Public Houses in Scotland, sent down by the House of Lords to the House of Commons in 1851. The appointment of individual justices of the peace for this duty might be made annually, at a general meeting of the justices for the county. In large counties separate committees might be appointed for different districts. It would, of course, be competent that the sheriffs or sheriff substitutes should, in their capacity of justices of the peace *ex officio*, be chosen members of such limited courts of appeal. But we do not concur with those witnesses who recommended that such an arrangement should be imperative. That matter seems to us to be one which may be left to the justices of each county to determine for themselves. We are also inclined to commit to their discretion the more difficult question, whether any of the justices or magistrates who commonly sit in the original licensing court, should (if in the commission of the peace) be named on the committee for hearing appeals, and thus enabled, it may be, to review their own judgment. It rather appears to us, that with reference to large towns, there is some advantage in the magistrates by whom the certificates for license have been either granted or refused in the inferior court, being represented in the appeal court. And in the counties, it might sometimes be difficult

Appeal courts.

Limited committee of justices to be named.

to constitute a satisfactory appeal committee, if all the justices who commonly sit in the licensing court were necessarily excluded from such committee.

Annual renewal of certificate.

3. The objection to the necessity of certificates being renewed annually, was one of the points most frequently reiterated before us by persons concerned in the spirit trade. We think that this supposed grievance was greatly exaggerated, and that little or no inconvenience was proved to have arisen from the practice. We concur in the opinion of the Chief Commissioner of the Metropolitan Police, Sir Richard Mayne, as expressed in his evidence before the Select Committe on Public Houses, in 1853 (Q. 58), that "the most efficient control on a publican is the fear of a renewal of his license being refused at the expiration of the year." We also consider that the occasion of the annual renewal may afford a suitable opportunity for a salutary warning being given to persons who, though not convicted of any breach of certificate, are not thought to have conducted their houses in the most orderly manner. At the same time, however, we are of opinion that every possible facility for renewal of their certificates should be given to those against whom there is no complaint. In particular, they should not be required, in subsequent years, to produce any of the documents necessary on a first application, or to attend in person at the licensing court. In the case of any objection being stated to the renewal of a certificate, written notice of such objection should be given to the applicant, and opportunity afforded to him to meet it.

Unnecessary, on renewal, to produce documents or attend in person.

Double certificate should not be required.

4. We are of opinion that the double certificate at present required to entitle a publican to obtain a license for the sale of malt liquors as well as spirits, is quite unnecessary. It is probably highly proper that a certificate should be granted, and that a lower rate of duty should be chargeable, to entitle a person not a retailer of spirits, to sell porter, ale, and beer. But there seems to be in Scotland a growing taste for malt liquors in preference to ardent spirits. This is a change which it appears to us most expedient to encourage. And as no additional Excise duty is exigible to entitle a licensed spirit dealer to sell these other liquors also, we think that any person who has obtained a certificate for license to sell spirits by retail to be consumed on the premises, ought to be authorised to sell porter, ale, and beer, without being required to apply for a separate certificate for that purpose.

Notice to neighbours of new applications for certificates.

Objectors to be heard against renewal of certificates.

5. We are of opinion that due notice should be given of all new applications for certificate, and that full opportunity should be afforded to any persons owning property or resident in the neighbourhood, to state, for the consideration of the licensing court, any objections they may entertain to such applications being granted. We think, also, that the same persons should be entitled to be heard as objectors to the renewal of any certificate formerly granted, under the penalty of being subjected in expenses, if their objections appear to the Court frivolous and vexatious. It was suggested to us that similar opportunities should be given for persons interested to object to any transfer of a certificate under the 19th section of the Act 9 Geo. 4, c. 58. But the circumstances under which alone transfers ought to be granted, seem to render this nearly impossible. And the object in view—namely, the prevention of improper transfers—would be attained, if it were perfectly understood in the licensing courts, that the person to whom a certificate for license has been transferred, does not thereby acquire any vested right to the renewal of such certificate, after the expiry of the year for which it was originally granted, but must, at the next licensing court, be treated in every respect as a new applicant.

Sittings of licensing courts to be extended.

6. The changes in the law which we have suggested, would of themselves render necessary an extension of the time during which the licensing courts are entitled to sit. This would obviate the difficulty experienced in some counties, from the circumstance of all the licensing courts being held on the same day, and the police officials being thus prevented from attending where their evidence is required.

II. The rules in force for the regulation of licensed houses may be considered under the four following heads:—

1. The prohibition on grocers to sell excisable liquors to be consumed on the premises.
2. The rules as to Sunday closing.

3. The

3. The restrictions as to hours on week days.

4. The powers of the police.

Grocers not to sell to be consumed on the premises.

1. In Scotland a very large proportion of the grocers are licensed to sell wine and other excisable liquors by retail. But the practice of allowing persons engaged in the grocery trade to sell spirits in small quantities to be drunk on the premises, has generally been considered to be productive of evil consequences to the working classes. A strong opinion to that effect was expressed in the Report of the Select Committee of the House of Commons on Public Houses (Scotland), 1846. That opinion was founded on the danger to servants and others, of being unable to obtain articles of daily consumption, without going to a place where they were exposed to the solicitations and temptations of a public-house. It was also believed that many persons would take drink in a grocer's shop, who would be ashamed to be seen entering a house devoted exclusively to the sale of spirits. Nor are these views confined to Scotland. In the evidence of the late Mr. Wood, Chairman of the Board of Inland Revenue, before the Select Committee on Public Houses (England), in 1853, we find it stated (Q. 477) that, "the sale of spirits in grocers' shops gives a facility of procuring them by persons who would not, perhaps, go directly into an avowed dram-shop, but who go into a grocer's shop and take the opportunity of drinking spirits." So also another witness examined before the same Committee, Mr. James Haughton, of Dublin, states (Q. 2561), "The giving of licenses to grocers is a thing which requires particular attention. In fact it was attended with so much evil, that at one time the grocers in Ireland were prohibited altogether from selling spirits; but they managed to sell them by taking a house next door, or dividing their premises, and having a party selling who was not the ostensible owner of the grocer's establishment. I rather think that law was relaxed or altered some years ago, and now they are allowed to sell, but prohibited from allowing it to be drunk on the premises. There is a deal of drunkenness amongst the domestic servants, particularly females; and it is said, and entirely believed, that it originates in these grocers' shops. They get it either for nothing, or being customers to the house, on behalf of their employers, or they pay for it and drink it surreptitiously." Considerations of this kind led to the prohibition under which, by the existing law of Scotland, grocers lie against selling spirits to be drunk on the premises. That prohibition appears to have been beneficial, and is approved of by the great body of the grocers themselves.

Many of the witnesses examined before us recommended that the restrictions should be carried still further; some proposing that a minimum quantity, such as a quart or a gallon, should be fixed, below which it should not be lawful for a grocer to sell spirits; and others suggesting the total separation of the trades of grocer and spirit-dealer. On the other hand, it was strongly represented to us by deputations from the grocers in different parts of Scotland, that any further restrictions on their business, and especially the complete separation of the trades of grocer and spirit-dealer, would be most injurious to their interests; and, in small towns and rural districts, would be productive of great inconvenience to the public.

After giving due weight to these opposing views, we cannot recommend the separation of the two trades, the union of which has prevailed so long and so generally throughout Scotland. Neither are we inclined to impose on grocers any of the suggested restrictions as to the quantity of spirits which they shall be permitted to sell. At the same time, we are aware that considerable evils may exist even under the present restriction, from the difficulty of strictly enforcing the law, and the facilities for its evasion.

Hours of opening grocers' shops and public-houses to be uniform.

These facilities are increased by one provision of the present law, which, on that account, as well as in fairness to other licensed dealers, seems to require amendment. Grocers are permitted to open their shops for the sale of liquors at six o'clock in the morning, while hotels and public-houses are, in ordinary cases, prohibited from opening before eight. It appears to us that, for obvious reasons, the hours for opening these two classes of licensed houses ought to be uniform. What hour ought to be fixed, is a matter to be adverted to hereafter, as is also the suggestion made to us by many of the witnesses, that grocers' shops should be subject to police inspection in the same way as public-houses.

Mistake in the form of hotel and public-house certificate.

This seems the proper place to mention that, while the prohibitions of the sale by dealers in groceries and other similar articles, of spirits to be drunk on the premises, appears, on the grounds we have stated, highly expedient, the mode adopted in the Act 16 & 17 Vict., c. 67, for enforcing that prohibition, is liable to serious objections, and has led to consequences which cannot have been foreseen by the framers of the Act. Instead of containing a direct prohibition against granting to grocers a certificate for selling excisable liquors to be drunk on the premises, the Act, as already explained, enjoins the holders of such a certificate (that is to say, keepers of hotels and public-houses) "not to sell any groceries or other provisions in the said house or premises to be consumed elsewhere." This restriction is necessarily inserted in the certificate granted to all licensed houses, except grocers' shops. The result is, not only that a hotel-keeper cannot lawfully send out a dinner to be eaten in a private house, but that it has been decided that if a person purchase any slight refreshment in an inn or public-house, or in a railway refreshment room, and carry the same, or even a portion of it, away with him, the keeper of the house or room by whom the article was sold, is guilty of a breach of his certificate, and liable to be punished accordingly.

To remedy this evident mistake in the Act 16 & 17 Vict., it appears to us, that the words prohibiting the sale of provisions to be consumed elsewhere, should be struck out of the certificates granted to inns or hotels and public-houses. An express prohibition would then be required against granting a public-house certificate to a grocer, although licensed to sell spirits by retail. And if it should be considered necessary, that prohibition might be extended to dealers in provisions of other kinds; in other words, to the keepers of provision-shops, as distinguished from inns and public-houses. There might no doubt be a risk that, after obtaining a public-house certificate, a person might evade the spirit of the law by selling groceries. But it is believed that the apprehension of being refused a renewal of his certificate at the next licensing court would obviate this danger.

Sunday closing.

2. Of the restrictions imposed by the present law in respect of the opening and closing of licensed premises, the most important is that which prohibits public-houses and grocers' shops to be open for the sale of liquors during any part of Sunday, and lays inns and hotels under the same prohibition, except for the accommodation of lodgers in the house and travellers. This restriction can scarcely be regarded as the introduction of a new law into Scotland. By the common law of Scotland, traders are not permitted to carry on their ordinary business on Sunday. There was probably always a relaxation of this rule in such cases of necessity as those provided for by the present law applicable to inns and hotels. But, with this exception, a dealer in spirits was, previous to the passing of the Act 9 Geo. 4, c. 58, under the same prohibitions, in regard to Sunday trading, as a dealer in any other commodity. It is extremely doubtful whether the Legislature intended by that Act to relax the law on this subject. But as the terms of the certificate, prescribed by the Act, prohibited persons holding such certificate from carrying on their trade during the hours of divine service on Sundays or other days set apart for public worship by lawful authority, it was decided by the High Court of Justiciary in 1832, on a suspension of a judgment of the magistrates of Edinburgh, that these words implied a permission to a grocer and spirit-dealer to exercise the latter branch of his trade at any other hours of the days in question.

Evidence was adduced to us from all classes of persons, of the benefits which have arisen from a return to the former practice on this subject. The improvement in large towns has been most remarkable. Whereas formerly on Sunday mornings numbers of persons, in every stage of intoxication, were seen issuing from the public-houses, to the great annoyance of the respectable portion of the population on their way to church, the streets are now quiet and orderly, and few cases of drunkenness are seen. The evidence of the police authorities proved that while there has been a considerable diminution in the number of cases of drunkenness and disorder since the passing of the Act 16 and 17 Vict., c. 67, the change has been more marked on Sunday than on any other day of the week. Employers of labour, and workmen themselves, were unanimous in testifying to the great improvement that has taken place in the regularity of the attendance at work on Monday morning; and many publicans examined before us expressed themselves as grateful for the existing law, regarding the cessation of business on Sunday as a boon of which they would not willingly be deprived.

It was alleged by some of the witnesses, that the improvement to which we have referred is more apparent than real, and that the persons who formerly resorted to public-houses on Sunday, now either purchase a supply of spirits on Saturday evening, which they consume next day in their own houses, or obtain drink to as great an extent as before at unlicensed houses, or as they are termed, "shebeens," the number of which is stated to have greatly increased of late years.

There may be some truth in these allegations. But we did not obtain any evidence to prove, that the practice of drinking to excess in their private houses, prevails to a greater extent among the lower orders now, than it did formerly. And with regard to "shebeens," while the evils arising from them, and the remedies by which these evils may be met, will form the subject of remark hereafter, it may be noticed at present, that to attribute to them anything like the amount of intemperance which the closing of public-houses has put down, is to ignore the evidence already referred to as to the decrease of Sunday convictions, and the increased regularity of attendance by the labouring classes at their work on Mondays.

Any individual cases of inconvenience brought under our notice as having arisen from the Sunday closing, were so inconsiderable in number and importance, as compared with the great and general benefit arising from the present state of the law, that we are not disposed to recommend any alteration with regard to it.

Persons falsely representing themselves as travellers to be fined.

It was, however, represented to us, on the part of hotel-keepers that they have often considerable difficulty in ascertaining what persons come under the description of "*bona fide* travellers," and that they are liable to be led into a breach of their certificate by false representations made to them on that point. We are satisfied that there has not practically been much reason for complaint on this subject. But, to prevent the alleged practice, we recommend, that persons falsely representing themselves as travellers, for the purpose of imposing on a hotel-keeper, should be deemed guilty of an offence, and on conviction should be liable to a fine.

3. The restrictions as to the hours at present imposed on all licensed houses, may be viewed with reference, first, to the hour of opening; and, secondly to that of closing.

Restriction as to the hour of opening licensed houses.

(1.) The hour of opening hotels and public-houses which seems to be most generally adopted, is 8 o'clock a.m. In Glasgow and some other places, the justices and magistrates have, in the exercise of the power committed to them, made the hour 7. Having regard to the recommendation which we have already made, that a uniform hour should be observed for all hotels, public-houses, and grocers' shops, we are of opinion that the hour to be fixed should be 8 o'clock, except in very peculiar circumstances, which should entitle the Licensing Court to fix an earlier hour. A regulation to this effect would meet the special wants of a particular place, without sanctioning, either the general adoption of the 7 o'clock hour, for which there appears to be no sufficient reason, or so indiscriminate an exercise of the discretionary power of the Licensing Court, as appears to exist in Banffshire, where 6 is the universal hour for opening. With regard to the beneficial results which have followed from the existing restriction, the testimony borne by all classes of witnesses, and from all parts of the country, was unanimous. It appears that, when the public-houses were permitted to be open at a very early hour, many of the operatives going to their work were tempted to purchase a glass of whisky, which frequently led to excess, so that they either lost the whole or a great part of their day's work, or went to it in a state disqualifying them for its satisfactory execution. The employers of labour, as well as many of the working men themselves, who were examined before us, in giving evidence in favour of the present restrictions, stated, that many of the workmen who were accustomed to indulge in this way, and complained at first of being deprived of the opportunity of obtaining their "morning dram," have come since to rejoice at the removal of the temptation presented, as they pass to their work, by the open public-house.

The general hour for all houses to be eight.

Rules as to the hour of closing licensed houses.

(2.) The evidence was not so uniform with regard to the hour fixed for closing at night. The hour of 11 p.m., which applies under the Act to all classes of licensed houses, seems quite suitable, and has met with very general approval,

when applied to ordinary public-houses, and spirit-shops. It appears, however, that that hour is in a great measure inapplicable, especially in large towns, to hotels and taverns. The evidence given by the hotel and tavern keepers was to the effect, that many of their customers come to them requiring supper or other refreshment after leaving the theatre, or other places of amusement; and as these entertainments are not generally concluded till about 11 o'clock, such visitors cannot be accommodated without a violation of the law. So also on the occasion of public dinners, suppers, and balls, the prescribed hour of closing has caused serious inconvenience; and from the evidence generally it appeared, that it has been found in the large towns nearly impossible properly to enforce the Act, in respect to the closing hour, in the case of this class of licensed houses.

Certain hotels and taverns to be kept open till 12 o'clock.

Such houses to pay a higher license.

Minimum value for such houses.

There seems to us to very considerable weight in these objections to the present law. We are, therefore, of opinion that it would be expedient, in the case of hotels and taverns, to extend the time of closing at night till 12 o'clock, which hour the persons interested generally stated would afford to them and their customers sufficient accommodation. We are disposed to recommend, that those hotel and tavern keepers who are desirous to keep open house for this additional hour, should be required to pay a higher rate of license for the privilege accorded to them. It might also be proper to fix a minimum annual value, below which no hotel or tavern should be allowed such a privilege. Were the suggestions adopted, it would be necessary to define the class of houses which are to come under the designation of a "tavern," as that term is unknown to the existing law; the only distinction being between inns and hotels on the one hand, and public-houses on the other, and the difference consisting in the former class of house containing at least four sleeping apartments, set apart for the accommodation of travellers. It does not, however, appear to us that there would be much difficulty in distinguishing between a tavern and a public-house, seeing the broad distinction which exists in point of fact, between an establishment, the principal profits of which are derived from regularly supplying dinners and suppers, and a house occupied chiefly for the sale of strong drink.

Extension of time for special occasions.

To meet the special and occasional cases of public dinners, and other similar entertainments, we recommend, that a discretionary power should be vested in the local authorities to grant, on such occasions, an extension of the usual time of closing, to persons whose licensed premises possess, in their opinion, the necessary accommodation.

Railway refreshment rooms.

We are also of opinion that railway refreshment rooms, duly licensed, and under the control of the directors of the railway company, should be allowed to be open at any hour of the day or night at which trains are passing or about to pass, but solely for the accommodation of railway passengers.

Power of police to enter licensed houses.

4. We have already stated that by the Act 16 & 17 Vict., c. 67, power was given for the first time in Scotland to the police to enter at any time public-houses, or any house where refreshments are sold to be consumed on the premises. Complaints were made to us by various hotel keepers of the vexatious manner in which this duty had been discharged. But it appeared on investigation, that all the cases complained of had occurred in or about the year 1854, shortly after the passing of the Act, and that the orders given by the superior officers of police had in every such case been exceeded by their subordinates. We consider it absolutely necessary that this power of visitation should continue to exist. In order to prevent its vexatious exercise, nothing further appears to be necessary, than that proper instructions should be issued by the superior police authorities, and that, in the case of respectable inns and hotels, no visitation should take place, except upon information or strong suspicion that a breach of certificate or other offence was being committed. A rule to this effect would be consistent with the practice in London, as explained by Sir Richard Mayne before the Select Committee on Public-houses in 1853. (Qq. 35, 36): "The practice is, that at any time when they think there is any offence being committed, or disorder going on, they demand admittance and go in and see what is going on; and if there is any offence being committed, they summon the party; and they summon him if he refuses to admit them, as he frequently does." "There is a general order in conformity with the law, that this power shall not be vexatiously enforced, and that they shall not go in to disturb the publican and people in the house when they have not reason to suppose that there is an offence committed."

Grocers' shops.

It was strongly urged by many of the witnesses, that the general power of visitation on the part of the police ought to extend to grocers' shops, when licensed for the sale of excisable liquors. This proposal seems to us to overlook the distinction between premises where such liquors, though sold, are not consumed, and a public-house. At the same time we are of opinion, that a grocer who violates his certificate by selling spirits to be consumed on the premises, puts an end to the distinction in question. We think, therefore, that power ought to be given to the police to enter any premises licensed for the sale of excisable liquors not to be consumed on the premises, provided they have obtained information, or have strong reason to suspect, that a breach of certificate is being committed therein.

Police to report as to houses where intoxication takes place.

We think the police should be specially directed to report to the justices of the peace, or burgh magistrates, the names of all publicans from whose premises persons in a state of intoxication are seen habitually to issue, and that such reports should be brought under the notice of the court on occasion of the annual renewal of certificates.

Persons taken up drunk to be fined.

It was stated to us as the practice in some towns, that persons in a state of intoxication, who are taken into custody for protection, are usually, when sober, discharged by the police of their own authority. We are of opinion that all such persons, before being discharged, should be brought before a magistrate, who should be empowered to impose upon them a small fine for the offence of being drunk, as is the law in England.

III. The last subject of our inquiry regards the measures now in use, or which may be adopted, for the prevention of illicit traffic in excisable liquors.

Doubts seem to be entertained in some quarters, whether the power given to the police to enter "any house where refreshments are sold to be consumed on the premises," authorises them to demand admission to any house, except one licensed for the sale of excisable liquors. These doubts ought, we think, to be authoritatively removed. All eating-houses, coffee-shops, temperance hotels, shell-fish stores, and other similar places of public resort, ought to be declared subject to the visitation of the police, precisely in the same manner as public-houses. In respect especially to temperance hotels and refreshment rooms, while it is not denied that there exist in all parts of Scotland most respectable establishments of that kind, in which the business is conducted strictly in accordance with the principles involved in their name, it appears that that name is often adopted as a disguise for places where a regular trade in spirits is carried on without a license. It seems to us that the only effectual means of preventing this practice, and also of checking similar evasions of the law in other places of the kind we have indicated, would be to place all houses or shops in which either food or drink of any kind is avowedly sold to be consumed on the premises, on the same footing, in regard to police inspection, as houses licensed for the sale of excisable liquors.

All houses or shops where either drink or food is sold to be consumed on the premises, to be subject to police inspection.

"Shebeens."

It is a different question how to deal with those houses, the keepers of which do not profess to sell either food or drink, but in which an illicit traffic in excisable liquors is carried on. Most of the houses of this kind come under the description of what are popularly called "shebeens." The evidence given before us established that such places have always existed, though principally in the large towns. It was also proved that their number has greatly increased of late years; and many of the witnesses attributed this increase to the restriction of the hours during which public-houses are allowed to be open, and especially to the entire closing of those houses on Sunday. There is no doubt, from the evidence, that Saturday night and Sunday is the time when the business of these illicit traders is carried on to the greatest extent.

Defective power of police.

Difficulty of obtaining evidence of sale.

The existence of these unlicensed houses is a great social evil; and hitherto the attempts to suppress them have failed. This is to be attributed partly to the defective powers of the police. Their right of admission to "any house where refreshments are sold" (however interpreted), may evidently often be insufficient to enable them to enter houses, where the practice of selling refreshments is the very fact to ascertain which the entry is made. There is also great difficulty in obtaining the evidence necessary to insure a conviction. The penalties prescribed by the Act of Parliament are directed against "every person bartering or

selling spirits without having obtained a certificate" (16 & 17 Vict. c. 67, s. 15). Under these words it has been generally held, that direct proof of an actual sale is required. The only mode in which evidence of this kind could be procured, was found to be the employment of police officers, or other persons in the pay of the police, going in disguise, and endeavouring to purchase spirits; a practice which was found to be liable to great abuse, and extremely demoralising to the police. This consideration, together with the extreme unpopularity of the system, has discouraged the authorities in many places from taking any active measures, within the last year or two, for the suppression of unlicensed houses.

Power to prosecute in common informer.

Another circumstance which has led to the same result has been the fact, that the duty of prosecuting for offences under these statutes is not specially committed to any public officer; so that a procurator fiscal conducting such a prosecution acts simply as a common informer, and involves himself, in case of a failure to convict, or of any technical miscarriage, in individual liability for expenses, and not unfrequently in the danger of an action of damages. For example, on the 9th March 1858, a person was tried before the Bailie Court of Glasgow, at the instance of the procurator fiscal of the burgh, for selling spirits without a certificate, and being convicted, was found liable in the sum of 7 *l.* of penalty, and in default of payment, sentenced to six weeks' imprisonment. The case was brought by suspension before the Court of Session. The Lord Justice Clerk observed, "The manner in which the prosecutor proceeded to recover the penalty, as well as the finding the charge proved, were all in terms of the statute; and the part of the conviction which found the suspender guilty of the offence charged was perfectly right, as was also the part imposing the penalty." But the conviction and warrant of imprisonment were set aside as illegal, on the ground that the convicting magistrate had failed to apportion the penalty as directed by the Act 9 Geo. 4, c. 58, s. 32. (Reid *v.* Lang, 13th July 1859, Session Cases, vol. xxi., p. 1298.) The procurator fiscal was found liable in expenses; and at the time of our sittings in Glasgow, an action of damages to the extent of 500 *l.* for wrongous imprisonment, was pending against him at the instance of the convicted shebeen keeper.

Reid *v.* Lang, 13 July 1859.

Prosecutions should be at the instance of Public Prosecutor.

We are decidedly of opinion, that all prosecutions for breach of certificate, or for selling ale, beer, spirits, wine, or other excisable liquors without a certificate, should, when not undertaken by the Excise, be conducted at the instance of a public prosecutor in his official capacity, and at the public expense. It appears to us, that the proper person to prosecute in such cases would be either the procurator fiscal for the county, the justice of peace fiscal, or the burgh fiscal, according as the case is tried before the sheriff, the justices of the peace, or the burgh magistrates. Suggestions were made to us, that as cases of contravention of certificates often involve points of legal difficulty, they should be tried exclusively by the sheriff; but considering that it is competent to take them before the sheriff at present, and that the proposed change involves an important principle, trenching on the general jurisdiction of the justices of peace and magistrates, we are not disposed to recommend it.

Extension to Scotland of the Irish Shebeen Act.

Several of the witnesses examined before us strongly recommended the adoption in this country of certain of the provisions of the Irish law, for the better provision of the sale of spirits by unlicensed persons. The Act passed on this subject in 1839 (2 & 3 Vict., c. 79), popularly known as the Shebeen Act, was referred to with approval by the late Mr. Wood, Chairman of the Board of Inland Revenue, in his evidence before the Select Committee on Public-houses, in 1853. The existing statute on the subject in Ireland is the Act 17 & 18 Vict., c. 89. By that Act it is provided, that for the purpose of convicting any unlicensed person, it is sufficient to prove that excisable liquors are kept for sale, or exposed for sale by him, or on his premises, or have been illegally consumed upon such premises within the preceding two months; and the fact of persons being found drunk, or having the appearance of having been recently drinking in an unlicensed house, is, in the absence of contrary evidence, held to be proof of the unlawful consumption of excisable liquors therein. Justices of the peace are also empowered to grant warrants for entering any unlicensed premises, in regard to which they have received information upon oath from any credible witness, that he has good reason to believe that excisable liquors are sold therein. Persons found drinking, or having the appearance of having been recently drinking on such premises, may be apprehended and brought before a justice of peace, and are liable on conviction

conviction to fine or imprisonment; and all excisable liquors found on the premises may be seized and forfeited.

Without recommending the extension to Scotland of the whole of these provisions, we are of opinion that measures of a similar character might very properly be resorted to, in order to put an end to a system which it is absolutely necessary to repress, alike for the protection of the revenue, in justice to licensed traders, and for the well-being of the community. That such measures might be expected to be effectual for the purpose, we have, in addition to the opinion of the late Mr. Wood, already referred to, the testimony of Mr. Smart, the superintendent of the Glasgow police.

Clubs.

Besides the places properly known as "shebeens," there is another class of unlicensed houses to which some reference must be made. Persons prosecuted for selling spirits without having obtained a certificate, or for refusing the police admission to the premises occupied by them, sometimes plead in defence that the house is properly a club, and as such entitled to the privileges of a private residence. In most of the cases of this nature brought under our notice, the so-called club had been avowedly established for the purpose of enabling persons to obtain suppers and similar refreshment after the hour at which, by the existing law, all licensed houses are closed. It is most probable, therefore, that any supposed necessity for such establishments will cease, if the recommendation we have made, as to the extension of the hour for closing certain classes of licensed houses, is adopted. But even were it otherwise, the existence of such places as those referred to does not seem to us any reason for a change in the law. There can be no doubt that persons may legally associate themselves together for convivial or other purposes under such regulations as to the terms of admission, the occupation of the premises, and the mode in which food and drink (including spirits) are supplied to the members, as will render it unnecessary for their place of meeting to receive a license, and will not authorise the police to enter it. But, on the other hand, it is equally certain, that every person who, in the absence of any such regulations, and without having obtained a certificate, actually sells spirits to be consumed on the premises to persons not the owners or occupiers of the house, but who resort there for the purpose of drinking, is liable to prosecution, either at the instance of the Excise, or of any informer, and may also, if he refuse to admit the police, be tried for that offence. Under which of these two descriptions any particular case falls must of course depend entirely on the evidence adduced for the prosecution and defence respectively.

Alterations in the law recommended.

Upon a full consideration of the whole subject and a careful review of the evidence, we are of opinion that the laws regulating the sale and consumption of excisable liquors in Scotland, and the system under which certificates and licenses are granted, are beneficial to the community. We think, however, that certain alterations in the laws and system in question would render them more effectual for the purposes they are intended to serve, and more acceptable to the people of Scotland generally. And in accordance with the views expressed in the foregoing report, we have agreed to the following recommendations:—

I. That hereafter no certificate for the sale of excisable liquors to be consumed on the premises should be granted, with respect to any house not already licensed, or to any new tenant or occupier of any house already licensed, unless the annual value of such house, as appearing in the valuation roll of the county or town in which it is situated, be, in small towns and rural districts, 10*l.*; in towns containing 5,000 inhabitants, 15*l.*; in towns of from 5,000 to 20,000 inhabitants, 20*l.*; and in larger towns or cities, 30*l.*

II. That the appeal to the quarter sessions of the county which, under the 14th section of the Act 9 Geo. 4, c. 58, is competent against any proceedings of any justices or magistrates, whether in granting or refusing or otherwise disposing of any application for a certificate, should hereafter be heard and determined by a committee, consisting of a limited number of justices of the peace of the county annually nominated for that purpose by a general meeting of the justices.

III. That persons making a written or printed application for a renewal of the certificate formerly granted to themselves, in respect to premises which have undergone no alteration, ought not, in the absence of any complaint against them, to be required to produce a report that the premises are suitable, or a certificate of

the applicant's character and qualification, or to attend personally before the justices or magistrates assembled for granting certificates.

IV. That any person who has obtained a certificate to sell spirits to be consumed on the premises, ought to be authorised to sell porter, ale, and beer without a second certificate.

V. That due notice should be given by public advertisement of all new applications for a certificate, and opportunity should be afforded to owners or occupiers of property in the neighbourhood of the premises, with respect to which any such certificate or any renewal of certificate is applied for, to state objections to such applications—all such objections being intimated to the justice of peace clerk, or town clerk, ten days at least before the meeting for granting certificates; but that no objection to the renewal of a certificate should be entertained, without written notice of such objection being given to the applicant, and opportunity afforded to him to meet it; and if the objection stated to such renewal of certificate appears to be frivolous and vexatious, it should be competent to find the objector liable in expenses.

VI. That the time during which it shall be competent for justices of the peace in counties and magistrates of burghs, if necessary, to sit on occasion of each meeting for granting certificates, should be extended to one calendar month.

VII. That the forms of certificates for inns and hotels, and for public-houses, contained in the Schedule appended to the Act 16 & 17 Vict., c. 67, should be altered, so as not to prohibit the persons obtaining such certificates from selling, in their licensed premises, provisions to be consumed elsewhere: the form of certificates for dealers in spirits, and grocers and provision-dealers trading in spirits, being retained; and no alteration being made in the law by which grocers are prevented from selling excisable liquors to be consumed on the premises.

VIII. That persons inducing hotel-keepers to sell or give out excisable liquors to them on Sunday, by falsely representing themselves as travellers, should be held guilty of an offence, and be liable, on conviction, to a fine.

IX. That the general hour for the opening of all premises in respect to which a certificate for the sale of excisable liquor (whether to be consumed on the premises or not) shall be granted, should be 8 o'clock a.m.; but that in very special circumstances, the nature of which shall be set forth in the certificate, it should be competent for the justices or magistrates to permit a hotel or public-house to be opened at an earlier hour.

X. That any person obtaining a certificate in respect to an hotel or tavern, the annual value of which, as appearing on the valuation roll of the county or burgh, shall be not less than 50 *l.*, should be entitled, on application to that effect, to have inserted in such certificate a permission to keep his house open and sell excisable liquors therein till 12 o'clock p.m.; and that the license duty payable by such person should be one-half more than the ordinary duty exigible for the premises in respect of which the certificate is obtained.

XI. That, on a representation by any person who has received a certificate for the sale of excisable liquors to be consumed on the premises, that it is intended that a public entertainment shall take place therein, for which an extension of the usual hour of closing is desired, it should be competent for any two justices of the peace of the county, or any two magistrates of the burgh within which such premises are situated (such justices or magistrates being entitled to grant certificates), on being satisfied that such premises possess the necessary accommodation, to grant special permission, applicable to that single occasion, to keep such premises open, and sell excisable liquors therein for such time beyond the usual hour, and under such regulations as such justices or magistrates shall think fit to appoint.

XII. That railway refreshment-rooms, duly licensed for the sale of excisable liquors, and under the control of the directors of the railway company, should be allowed to be kept open, and such liquors to be sold therein, for the use of railway passengers solely, at all hours, either of the day or night, at which trains are passing or about to pass.

XIII. That

XIII. That the police should be required to report specially to the justices of the peace in counties, and the magistrates in burghs, the names of all persons licensed to sell excisable liquors, from whose premises persons in a state of intoxication are seen habitually to issue; and that such reports should be brought under the notice of the justices or magistrates when assembled to grant certificates.

XIV. That persons in a state of intoxication, taken into custody for protection, should, before being dismissed, be brought before a magistrate; and, on conviction of the offence of being drunk, should be liable to a penalty not exceeding 5 *s.*, and, in default of payment, to imprisonment for any period not exceeding 24 hours.

XV. That it should be lawful for the police to enter into all eating-houses, coffee-shops, temperance hotels, shell-fish stores, and other places where food or drink of any kind is sold to be consumed on the premises, in the same manner as public-houses, and under the same penalties for refusing to admit them or obstructing their admission; and that it should, in like manner, be competent for them to enter any grocer's or provision-dealer's shop, in respect to which a license has been obtained for the sale of excisable liquors, not to be consumed on the premises, provided they have received credible information, or have strong reason to suspect that a breach of certificate is being committed therein.

XVI. That all prosecutions for breach of certificate, or for selling excisable liquors without a certificate, should, except when undertaken by the Excise authorities, be conducted at the instance of the procurator fiscal, the expenses being defrayed out of the funds applicable to the prosecution of other offences, and the whole of the penalties recovered being paid into that fund.

XVII. That in order more effectually to suppress unlicensed houses, provisions similar to those of the Irish Act 17 & 18 Vict. c. 89, ought to be adopted with reference to Scotland.

Since this report was drawn up, a Bill has been introduced into the House of Commons by the Chancellor of the Exchequer, to regulate the licensing of refreshment houses and the granting of wine licenses in England.

We think that the extension to Scotland of a Bill on the same principle would be highly expedient. But the provisions of any such Bill would require to be specially adapted to the peculiar circumstances of that part of the United Kingdom.

All which we humbly submit to your Majesty's gracious consideration.

(signed) *G. Clerk.*
James Campbell.
Alex. E. Monteith.
A. Campbell Swinton.
William Leslie.
Alexr. Maclean.
F. Alleyne M'Geachy.

LICENSING SYSTEM (SCOTLAND).

COPY of Report by Her Majesty's Commissioners for Inquiring into the Licensing System, and Sale and Consumption of Excisable Liquors in *Scotland*.

(Presented to Parliament by Her Majesty's Command.)

Ordered, by The House of Commons, *to be Printed,*
4 *July* 1861.

403.

Under 3 *oz.*

THAMES EMBANKMENT COMMISSION,

1861.

APPENDIX A.

TABULAR STATEMENT of PLANS and DESIGNS for the EMBANKMENT, &c. of the RIVER THAMES presented for the consideration of the Commissioners up to the 8th of April.

APPENDIX A.—Tabular Statement of Plans and Designs for the Embankment, &c. of the River

Evidence at page	Name.	General Description.	Accommodation provided to relieve existing Thoroughfares.		
			Road for Main through Traffic from Street.	Road for Wharf Traffic from Water-side.	Railway Accommodation.
23	Mr. G. AICKIN -	Embanks both sides of the River from Westminster to London Bridge. On the North Side Roadway with Wharves and Warehouses under Docks. On the South side, Road on level of Bridges with Railway underneath, and Wharf 2 feet above Trinity High Water-mark under all.	High Level Road to join Bridges on both sides of the River.	——	Railway on South Side.
34	Mr. W. AUSTIN -	River Wall on both sides from Chelsea to the entrance to the Thames leaving a Waterway inside for Barges, &c., or for infall of Land if preferred. Average width of new river stream between embankment Walls 800 feet.	Direct Thoroughfare.	Partial Thoroughfare.	None.
25	Mr. W. BARDWELL	On North side only a Viaduct to be carried from Westminster Bridge to Queenhithe, 100 feet wide, 4 feet above Trinity High Water-mark, to be built of brick or stone; to pass under all Bridges; all the existing Wharves, *except four*, to be retained; the Roadway to occupy 20 acres, the Wharf Basins 18 acres, and the open spaces 12 acres.	A Roadway, Tramway, and Footways, with communication to Whitehall, Norfolk Street, Temple Lane, Tudor Street, Chatham Place (Blackfriars Bridge.)	——	No Railway.
79	Mr. J. W. BAZALGETTE.	Embankment from Westminster Bridge on both sides the River, extending on North side to Queenhithe, and on South Side to Bankside. Docks with access to existing Wharves. Level of Dock Entrances limited by level of Sewer. Level of Embankment 4 feet above Trinity High Water-mark for Wharves. An under Roadway, with a Headway generally of 11 feet, and a minimum Headway of 8 ft. 6 in.	Road on Girders, above Wharf-level, communicating on the level with Westminster Bridge and Whitehall Place, passing under Hungerford Bridge, under Waterloo Bridge, level with Blackfriars, up Queenhithe Dock into Cannon Street. Road on level of Wharves communicating with Whitehall Place and with Thames Street.	——	No Railway.
117	Mr. F. W. BEAUMONT.	Embankment on North Side from Whitehall Place to Blackfriars, enclosing a Water Space in front of existing Wharves. Esplanade from Wesminster to Whitehall Place. Tidal Gates at Blackfriars Bridge.	Road from Whitehall Place to Blackfriars Bridge.	——	——
38	Messrs. BIDDER, HARRISON, and STEPHENSON.	On North Side.—Embankment from Westminster Bridge to Southwark Bridge—Wharves, Warehouses, and Lower Road upon the Embankment, and above these a Main Road, at the side of which there are to be Shops, the lineal frontage for Warehouses and Shops being 4,300 feet. The Embankment encloses Docks 12 acres in extent, accessible from the River by means of Locks, the Sills being 12 feet 6 inches below Trinity High Water-mark.	Main high level Road, with communications to Westminster Bridge, Whitehall Place, Craven Street, Cecil Street, Norfolk Street, Essex Street, Waterloo Bridge, Blackfriars Bridge, and Southwark Bridge.	Lower Road, communicating with Warehouses, and another Road 30 feet Wide, round basin.	Railway suggested for the South Side
41	Mr. H. H. BIRD -	Embankment on North Side; from Westminster Bridge to Queenhithe Dock. Embankment to be 3 feet above Trinity High Water mark, with Wharves, a Road, and a Railway; Docks retained within the Embankment. The abstraction of Tidal Waters to be compensated by a Reservoir constructed higher up the River. The Road to terminate at Blackfriars Bridge, and the Railway, which is proposed to commence at the Victoria Station, to terminate at Queenhithe Dock.	High Level Road over Wharves from Whitehall Place to Queenhithe Dock, with communication to Surrey Street, Norfolk Street, Arundel Street, and Blackfriars Bridge. The Road is on Columns.	——	Railway on the inner side of the Embankment from Victoria Street Station.
17	Mr. W. A. BROOKS	Three plans, of which the first is a design for embanking both sides of the Thames in its passage through the metropolis, where such Embankments are necessary and practicable. The total cost being 441,962*l.*, the aggregate length of the six Quays being 26,340 feet. The second plan is for a Quay of greatest limit of protrusion into the River; similar in that view to the several plans submitted before the Select Committee of the House of Commons, but is withdrawn as involving the imperative simultaneous construction of extensive River Works, the estimate being 146,760*l.* The third, or plan now submitted is for a Granite Quay between	Road leaves Westminster Bridge, and passes under all Bridges to the Puddle Dock, beyond Blackfriars, without intermediate communication.	——	Low Level Railway from the West-End Lines, at one end; passing behind the Houses of Parliament and joining the Blackwall Line at the other end.

Thames presented for the consideration of the Commissioners up to the 8th of April.

Mode of Accommodating Sewer.	Extent of Encroachments on River at the several Bridges.					Estimated Expense.	Mode of defraying Expense.
	Westminster.	Hungerford.	Waterloo.	Blackfriars.	Southwark.		
Sewer under Embankment.	Line of Houses of Parliament.	160 ft. inside Hungerford North Pier. 160 ft. inside Hungerford South Pier.	One Arch on North Side. One Arch on South Side.	One Arch on North Side. One Arch on South Side.	$\frac{1}{8}$ of Arch on North Side. Cuts off Shore on South Side.	North Side £845,000. South Side £350,000.	—
Sewer to be placed under Embankment of each side of the River.	—	—	—	—	—	£200,000 per Mile North. £150,000 per Mile South.	By Rental or Purchase of the Wharf Waterways or Lands within the Embankment.
Sewer to pass under centre of Embankment.	Line of Houses of Parliament.	North Pier.	Two Arches.	Two Arches.	—	£500,000.	—
Sewer under Embankment at about 12 ft. 6 in. below Trinity High Water-mark, which limits level of Dock Entrances.	On North Side Line of Houses of Parliament. South Side Two Arches.	On North Side North Pier. South Side half way to Pier.	On North Side Two Arches. On South Side One Arch.	On North Side Two Arches.	—	—	—
Carried down front of the present Wharves.	—	—	—	—	—	£300,000 exclusive of dredging.	—
Sewer under Roadway, which limits level of Sill of Dock to 12 ft. 6 in. below Trinity High Water-mark.	Line of Houses of Parliament.	North Pier.	Two Arches.	Two Arches	—	£1,500,000.	Metropolitan Board of Works to pay £250,000. Government to contribute £250,000. Sale of Land £1,000,000.
Sewer under Docks.	Line of Houses of Parliament.	North Pier.	Two Arches.	$1\frac{1}{4}$ Arch.	—	—	—
—	Line of Houses of Parliament.	30 ft. North of North Pier.	One Arch.	One Arch.	—	—	—

APPENDIX A.—Tabular Statement of Plans and Designs for the Embankment, &c. of the River Thames

Evidence at page	NAME.	GENERAL DESCRIPTION.	Accommodation provided to relieve existing thoroughfares.		
			Road for Main through Traffic from Street.	Road for Wharf Traffic from Water-side.	Railway Accommodation.
	Mr. W. A. BROOKS (*continued.*)	Westminster Bridge and Queenhithe Dock, involving an expenditure of 146,760*l.* The same plan shows also a line of Railway to be established at or about the level of 3 feet above Low Water of Spring Tides passing under the northernmost arches of Waterloo and Blackfriars Bridges, and involving an expenditure of 127,212*l.*, which would be self-supporting, and which Railway will enable the Low Level Sewer to be economically constructed and maintained clear of obstruction.			
84	Mr. GEO. BURGE -	Embankment on the North Side only. A Barge Bed or Campshead constructed over the Sewer, carried up to the existing Wharves; and a Roadway 150 feet from the Wharves carried on Columns in the River, so as not to interfere with the Wharves, and to allow the Water Traffic to be carried on underneath.	Road on Columns, placed 150 feet from existing Wharves.	None.	None.
53	Mr. B. BUSH -	Embankment from Milbank to London Bridge; proposes that a Railway and a Sludgeway, with a filter for Sewage, should be placed side by side, and a Road above; the Sewer to be placed under the Sludgeway, with the view of removing by Railway the Sewage Manure, a Road being placed on the top.	Road on Top; but no particulars shewn.	——	Railway from Pimlico Railway to Blackwall Railway.
—	Mr. W. A. BYRON	To remove the mud by placing Fenders at mouths of Sewers, and opening them at low water to carry off the mud.	——	——	
26	Mr. H. G. COOMBS	Embankment on North Side from Westminster Bridge to London Bridge by Viaduct. Embankment for Sewer continued to the Tower. A Dock between Whitehall Stairs and Waterloo Bridge, accessible at High Water to Barges floating over Embankment.	Roadway with communication at all Bridges except Hungerford Bridge. Main Road under Viaduct.	——	——
—	Mr. GEO. COWDERY	A Roadway on Piles, not interfering with access by Barges to existing Wharves; Iron and Glass Buildings being placed by the side of the Road.	Roadway to pass over the River Bridges, with communications to the Bridges.	None.	None.
51	Mr. ALEX. DOULL	On North Side. Embankment from Westminster Bridge to London Bridge, solid to 4 feet above Trinity High Water, upon which is a lower Road; an upper Road being placed over it on Iron Columns.	Upper Road on Iron Columns, 80 to 100 feet apart, joining all Bridges on their present level except Hungerford, and also communicates with Whitehall.	Lower Road. with communication to Whitehall & Queenhithe.	No Railway
—	Mr. JNO. DYER -	Proposes the formation of Dams and Locks for ridding the Metropolis of the Sewage.	——	——	——
37	Mr. J. EDMESTON	Embankment by a River Wall from Westminster Bridge to Southwark Bridge, and a Roadway with a landing stage underneath, and a railway below Trinity High Water, between the Roadway and the present Shore. The Embankment to pass under all the Bridges; Blackfriars Bridge being rebuilt. New Wharves to be formed on the River Wall.	Roadway 55 feet wide -	——	Railway to be carried below Trinity High Water.
50	Mr. T. L. EVANS -	Embankment on both sides; on North Side, from Millbank Road to Southwark Bridge; on South Side, from Lambeth to Southwark Bridge. On the North Side, Docks with Tide Gates to be placed inside Embankment. The Embankment to be 5 feet above Trinity High Water-mark for Wharves, with a low level road, over which a high level road is to be constructed. On South Side, Embankment leaves 650 feet of Waterway above Southwark Bridge.	High Level Road, communicating with Westminster Bridge, Whitehall Place, Essex Street, Waterloo Bridge, Blackfriars Bridge, Southwark Bridge, with a Tram for carts and waggons.	Low level road communicating with BridgeStreet, Westminster, Whitehall Place, Essex Street, Bouverie Street, Queenhithe.	None.

presented for the consideration of the Commissioners up to the 8th of April.—*continued.*

Mode of Accommodating Sewer.	Extent of Encroachments on River at the several Bridges.					Estimated Expense.	Mode of defraying Expense.
	Westminster.	Hungerford.	Waterloo.	Blackfriars.	Southwark.		
Sewer to be placed under the Barge Bed, and 20 feet from the existing Wharves.	—	—	—	—	—	—	—
Sewer under Embankment.	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Sewer under Road and Embankment to Tower.	Line of Houses of Parliament.	North End of the North Pier.	Inside the abutment on Somerset House Terrace.	Abutment.	Abutment.	—	—
Sewer to be placed in the bed of the River under the Roadway.	—	—	—	—	—	—	—
Sewer to be constructed of Iron and placed at back of Embankment.	Line of Houses of Parliament.	30 feet North of North Pier.	$1\frac{3}{4}$ Arch.	$1\frac{3}{4}$ Arch.	$\frac{1}{8}$ of North Arch.	£502,000.	—
—	—	—	—	—	—	—	—
Sewer to be placed in the River Wall or beneath the Railway.	Generally to reduce the width of the River 70 feet.			First Arch.	—	£450,000.	—
Sewer under Embankment.	Line of Houses of Parliament.	North Pier.	Two Arches on North Side. One Arch on South Side.	$2\frac{1}{4}$ Arches on North Side.	$\frac{1}{8}$ of First Arch.	North Side, £553,360. South Side, £298,400. Total, £851,760.	—

APPENDIX A.—Tabular Statement of Plans and Designs for the Embankment, &c. of the River

Evidence at page	NAME.	GENERAL DESCRIPTION.	Accommodation provided to relieve existing Thoroughfares.		
			Road for Main through Traffic from Street.	Road for Wharf Traffic from Water-side.	Railway Accommodation.
—	Mr. EDWD. FINCH	Proposes a New Bed for the River between Deptford and Vauxhall, retaining the preent River as a Fresh Water Lake.	——	——	None.
2	Messrs. FOWLER, FULTON, and HEMANS.	Embankment on North Side from Westminster Bridge to Blackfriars Bridge, reserving Docks to give access to existing wharves. No Embankment on the South Side.	Road 80 feet wide, with Footway 20 feet, communicating with Westminster Bridge, Whitehall Place, Waterloo Bridge, and Blackfriars Bridge.	——	Railway between Road and Docks
8	Mr. HAMILTON H. FULTON.	Embanks both sides. On South Side, from Hammersmith Bridge to Southwark Bridge. On North Side, from Millbank Road to Southwark Bridge. On the North Side the Scheme is the same as Messrs. Fowler, Fulton, and Hemans' Plan, between Westminster Bridge and Blackfriars Bridge, with an additional portion to Southwark Bridge. Docks on both Shores inside the Embankment. No Warehouses on the South Side.	A High Level Road from Blackfriars to Southwark Bridge on the North Side, in addition to what is proposed on Messrs. Fowler, Fulton, and Hemans' Plan, and a High Level Road 60 feet wide for whole distance on South Shore, joining all Bridges except Blackfriars Bridge.	Road for Wharf Traffic underneath the High Level Road.	North Side a Railway as proposed by Messrs. Fowler, Fulton, & Hemans'. South side a Railway to join London, Chatham, and Dover Railways, and Charing Cross Railway, and Victoria Street and Pimlico Railway.
64	Mr. JOSEPH GIBBS	Suggestions for details of construction of the River Walls of a Thames Embankment, with Waterway at the back of the Embankment.	Road between Railway and Shore.	Wharf roads on inner side.	Railway to be nearest to the River.
98	Mr. W. HAGGETT	Suggests an Embankment on North and South Side, placed to allow access to existing Wharves by means of main Docks, on the sides of which Warehouses are to be erected.	Roadway 100 feet wide -	——	Railway under the Roadway.
—	Messrs. HUKINS and Co.	Embank River from Kew to London; Embankment from Battersea to London Bridge on both sides of River, 150 feet wide, with floating docks inside, accessible by arches and dock gates. Filling in of embankment to be done by dredging.	——	——	No Railway -
—	Mr. JOHN HUNT	Suggests Sewer to be flushed with tidal water, and a road to be placed over. Manure to be manufactured out of Sewage.	——	——	——
34	Messrs. JACKSON, NORRIS & SNELL.	Embank both sides of the River, from above Chelsea to below London Bridge; Railways to be placed on the Embankment; encloses Docks in which constant high water is to be retained.	None.	None.	A Railway.
—	Dr. I. - - -	Suggests a Sewer commencing at high water mark at Westminster and terminating at low water mark just past Blackheath.	——	——	——
61	Mr. C. B. LANE	Suggests to modify Messrs. Fowler, Fulton, and Heman's plan. A Street to be under the Railway.	——	——	High level railway to communicate with the Kensington Railway, the Charing cross Railway, the London, Chatham, and Dover Railway, and the Blackwall Railway.
	Mr. THOMAS LETTS.	Suggests a low-level roadway, and Wharf next the River. A high-level road above for Carriages, with warehouses and Houses—and a low-level Street at the back.	——	——	——

Thames presented for the consideration of the Commissioners up to the 8th of April.—*continued.*

Mode of Accommodating Sewer.	Extent of Encroachments on River at the several Bridges.					Estimated Expense.	Mode of defraying Expense.
	Westminster.	Hungerford.	Waterloo.	Blackfriars.	Southwark.		
—	—	—	—	—	—	—	—
Sewer to be under Railway.	—	—	Two Arches.	—	—	£700,000	Railway Company to pay £300,000. Remainder by Government or Metropolitan Board of Works.
Sewers under Embankments on both sides.	Line of Houses of Parliament One Arch on South Side.	On North Side Includes NorthPier. Midway to South Pier.	Two Arches on North Side. One Arch on South Side.	Two Arches on North Side. One Arch on South Side.	Inshore Abutment of First Arch on North Side. Cuts off Shore on South Side.	—	—
Sewer under Roadway.	Line of Houses of Parliament.	Inner of the North Pier.	First Arch.	First Arch.	—	—	—
Sewer to pass under the Embankment with arrangement for converting the Sewage into Manure to be removed by the Railway.	—	—	—	—	—	—	1. By Receipts from Railway Traffic. 2. Rents from Warehouses and Docks. 3. Profit from Sewage Manure.
Main sewer under embankment.	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Sewer under embankment.	Line of Houses of Parliament.	30 feet inside North Side. 30 feet inside South Side.	1¾ Arch North Side. 1½ Arch South Side.	2½ Arches North Side. Two Arches South Side.	¾ of First Arch North Side. ¾ of First Arch South Side.	£800,000	Yearly Receipts estimated at £194,000.
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

APPENDIX A.—Tabular Statement of Plans and Designs for the Embankment, &c. of the River Thames

Evidence at page.	NAME.	GENERAL DESCRIPTION.	Accommodation provided to relieve existing Thoroughfares.		
			Road for Main through Traffic from Street.	Road for Wharf Traffic from Water-side.	Railway Accommodation.
54	Mr. G. F. LYSTER	Embankment on North Side, with suggestions for a South Side Embankment. Embankment from Westminster Bridge to Southwark Bridge, 5 feet above Trinity High Water-mark. Roadway above, but retired 10 feet. An Inner Roadway over the Sewer, and along the line of existing Wharves. Under the outer Roadway a line of Tidal Canals or Laybyes. Docks between inner and outer Roadways. To be supplied with pure Water from the upper part of the River, always flowing on the ebb-tide.	Main Roadway 120 feet wide, with communication to Westminster Bridge, Whitehall Place, Waterloo Bridge, Blackfriars Bridge and Southwark Bridge, with Footways. Roadway 30 feet wide along the fronts of existing Wharves.	——	A Tramway.
84	Mr. JOHN MARTIN (communicated by Miss Martin.)	Embanks both sides of the River. Embankment from Millbank to Southwark Bridge by means of a Quay with Waterway inside; to be dry at low water.	Colonnade Road over the Embankment.	——	——
104	Mr. W. T. MATIER	On North Side. Embankment from Westminster Bridge to London Bridge, 120 feet wide, with a Wharf next the River, a Road next the shore, and a Railway between the Road and Wharf, with an access over the Railway to the Road, with the object that the Goods should be delivered on to either Road or Railway from Wharves, or vice versâ.	Road 85 feet wide.	——	Railway 15 feet wide.
29	Capt. W. S. MOORSOM.	Embankment on North Side from Westminster Bridge to Queenhithe. Some existing Wharves at Queenhithe to be bought up. A Road to be placed on the Embankment with Quays between it and the River, opposite to existing Wharves, and in other places a Public Promenade. Warehouses to be built between the existing Wharves and the New Road. A Tramway or Railway, with the Sewer underneath it, being placed under the Road. The Works to be executed under a Commission of three Paid Members of which the Chairman of Metropolitan Board of Works is to be one, and two Honorary Members, viz.,—The Lord Mayor and the First Commissioner of Public Works. A Draft of a Scheme proposing to make compensation retrospective as to payment, with other provisions, appears in the evidence.	Road to commence at Westminster Bridge, and communicate with Whitehall Place, Craven Street, Buckingham Street, Waterloo Bridge, Blackfriars Bridge, and Queenhithe, Arundel Street, and Surrey Street.	All the way along Public Road.	Railway or Tramway in a Tunnel under Road.
13	Mr. H. R. NEWTON	Embankment on both Sides of the River; from Lambeth Palace and opposite, where a Bridge is to be placed, to Puddle Dock and opposite, leaving a water space inside.	A Viaduct	——	
72	Mr. THOMAS PAGE	Embankment from Westminster Bridge to Blackfriars Bridge, on North Side only, with Docks; entered by means of Locks; a Road on the Embankment.	Road from Whitehall Place to Blackfriars Bridge, communicating at Norfolk Street, and passing under Hungerford and Waterloo Bridges.	None.	Railway between Embankment and Shore.
52	Capt. S. P. PLUMER.	Road over Sewer between Westminster and London Bridge. Road to be on arches, to allow water to flow through to Docks placed inside, connected with existing Streets by means of Viaducts.	A Roadway on Arches	——	No Railway.
14	Mr. A. M. RENDEL	On North Side.—Embankment from Westminster to Paul's Wharf, with Roadway. Tidal entrance Basins leading to Docks in front of existing Wharves. The South Side not to be encroached upon.	Roadway 100 ft. wide from Westminster Bridge to East End of Temple, and 90 ft. wide from thence to Blackfriars, level with Westminster Bridge, to pass under Hungerford and Waterloo Bridges, level with Chatham Place, with a Branch Road under Blackfriars Bridge, or if a New Bridge is built, to pass under it and out at Puddle Dock into New Earl Street; to communicate with Buckingham Street, Cecil Street, Norfolk Street, and Essex Street.	——	No Railway.

presented for the consideration of the Commissioners up to the 8th of April.—*continued.*

Mode of Accommodating Sewer.	Extent of Encroachments on River at the several Bridges.					Estimated Expense.	Mode of defraying Expense.
	Westminster.	Hungerford.	Waterloo.	Blackfriars.	Southwark.		
Sewer at front of existing Wharves under Roadway or through docks.	Line of Houses of Parliament.	First Pier.	Two Arches.	Two Arches.	Abutment of Wharf.	£1,070,000	
Sewer to be placed under embankment.	—	—	One Arch.	—	—	—	—
Sewer under Road.	Inside line of Houses of Parliament.	Present Hungerford Wharf.	One Arch.	One Arch.	Steps of Bridge.	—	—
Sewer in same Tunnel as Railway, but under it.	Line of Houses of Parliament.	Inner part of North Pier.	1¾ Arch	⅛ Arch	—	£588,562*l.*	To borrow 500,000*l.*, of Exchequer Loan Commission, to be repaid by Sales of Land, and a Total Sale of 652,344*l.* from this source. No credit, however, taken for Sales of Land opposite Somerset House, Temple Gardens, and Whitehall, nor from Rent of Tramway estimated at 10,079*l.* per annum.
—	Line of Houses of Parliament.	Inner of North Pier. South Pier.	1½ Arch on North Side. 2½ Arches on South Side.	1¼ Arch on North Side. 1½ Arch on South Side.	—	—	—
Low-level Sewer	Line of Houses of Parliament.	30 feet inside North Pier.	1½ Arch	One Arch	—	£450,000.	—
Sewer under the Road	- -	- -	Two.	—	—	—	—
Sewer commencing at Hungerford Market, to pass under the front of existing Wharves in cast-iron cylinders lined with brick or not.	Line of Houses of Parliament.	30 feet within North Pier.	1¾ Arch.	Two Arches.	—	£630,000.	—

APPENDIX A.—Tabular Statement of Plans and Designs for the Embankment, &c. of the River

Evidence at page.	NAME.	GENERAL DESCRIPTION.	Accommodation provided to relieve existing Thoroughfares.		
			Road for Main through Traffic from Street.	Road for Wharf Traffic from Waterside.	Railway Accommodation.
—	Capt. J. H. SELWYN, R.N.	Suggests an Embankment by means of Sewer with Road over, and a Street Railway between the Embankment and the Shore.	——	——	——
66	Mr. J. SEWELL -	Embankment on the North Side. A Bank, six feet above low water, to be constructed sloping up to existing Wharves, so as to afford a bed for Barges to lie on, under which the Sewer is to be placed. A Railway to be carried on piles over it, leaving an access to existing Wharves underneath. A bed for Barges, with a Sewer on the South Side.	None.	None.	A Railway, with four lines of rails to run from the Victoria and Pimlico Railway to London Bridge in front of the Houses of Parliament, with a Goods and Coal Station at Hungerford and Blackfriars, and Stations at all the Bridges as well as at other places.
8	Mr. F. W. SHEILDS	Embanks the River on North Side from Westminster to Blackfriars, nearly on Mr. Walker's Lines. Top of Face Wall 3 feet above Trinity High-water mark. Fills in completely from thence to the present shore. Lays out a Level Road through the Centre of the reclaimed space. Buys up existing Wharves where not of great value, laying out the Property so acquired between the River and the proposed Road for Wharves, Warehouses, &c., and on the Land Side of the Road for Shops, &c. Gives up Embanked Space to proprietors of Ornamental Grounds, Public Buildings, and important Wharves.	New Street, to be 4 ft. 6 in. above Trinity High-water mark. Passing under Hungerford and Waterloo Bridges, with communication to Bridge Street Westminster, Whitehall Place, Craven Street, Villiers Street, Buckingham Street, George Street, Adelphi, Wellington Street, Surrey Street, Norfolk Street (by Stairs), Arundel Street, New Bridge Street, Blackfriars.	——	None.
12	Mr. HENRY W. SICH	Embankment from Southwark Bridge to Westminster Bridge, top 2 feet above Trinity High-water mark, with Quays and Wharves, and a Road on columns over, enclosing Docks at right angles to the line of River; to be entered by Locks, and single Gates.	Road 60 feet wide on columns or Brick Piers	None.	No Railway.
91	Mr. JOS. SPROUL.	Embankment from Westminster to London Bridge, Quays above the Embankment.	——	Roadway 100 feet wide, 25 feet for landing goods on.	——
35	Mr. J. F. STANFORD.	Embankment on both sides. Embankment extending from Millbank to Paul's Wharf on North Side. A Promenade and Carriageway near the River. A Railway next and a Wharf. A width of 12 feet for Wharf. It passes under all Bridges. Docks reserved for access to existing Wharves.	Carriage Road 24 feet wide, and Promenade 20 feet, near the River, but no communication with intermediate thoroughfares. Communication round Docks to existing Shore, 15 feet wide.	——	A Railway 22 feet wide intercepting communication between Road and Shore.
—	Rear-Admiral STUDDERT.	Suggests an Embankment with a Wharf, and the Sewer under.	——	——	——
—	Mr. MARSHALL TALBOT.	Places a Dam across the River at Woolwich, and retains the level of the Thames at high water.—Ships to pass through Locks.	——	——	——
—	Messrs. TASSELL & Co.	Suggestions as to Materials only.	——	——	——
104	Mr. T. THOMPSON	Embankment on the North Shore from the Houses of Parliament to London Bridge raised a little above Trinity High Water-mark, from Westminster to Blackfriars Bridge, but rises to level of Blackfriars Bridge, and continues at a high level to allow Wharves to be made.	Roadway 90 feet wide with a Footway 12 feet wide.	No Wharves between Westminster and the Temple.	——
62	Mr. D. THORNBURY	Embankment from Vauxhall to the West of the Tower, 3 feet above Trinity High-water mark, passing under all the Bridges, with Quays.	Roadway upon Sewer and communicating with all existing Thoroughfares.	——	——

Thames presented for the consideration of the Commissioners up to the 8th of April.—*continued.*

Mode of Accommodating Sewer.	Extent of Encroachments on River at the several Bridges.					Estimated Expense.	Mode of defraying Expense.
	Westminster.	Hungerford.	Waterloo.	Blackfriars.	Southwark.		
—	—	—	—	—	—	—	—
Sewer to be placed under the raised bank on River side of Piles.	One Arch outside line of Houses of Parliament.	North Pier.	One Arch.	Two Arches.	Half of North Arch.	£1,000,000.	—
Sewer under New Road.	Line of Houses of Parliament.	First opening to inner face of first Pier.	First Arch to inner face of first Pier.	First Arch.	—	Cost of Construction £250,000.	—
Sewer under Docks.	Line of Houses of Parliament.	First Pier.	Two Arches.	One Arch.	—	—	—
Under the Embankment.	—	—	—	—	—	—	—
Sewer under inner part of Road.	North Side Line of Houses of Parliament.	North Side First Pier.	North Side One Arch. South Side One Arch.	North Side One Arch South Side One Arch.	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
Sewer to be placed behind River Wall, to pass out under Tower Hill to the Commercial Road, and onwards, to outfall at Barking.		—	—	—	—	£854,000	—

APPENDIX A.—Tabular Statement of Plans and Designs for the Embankment, &c. of the River Thames

Evidence at page	NAME.	GENERAL DESCRIPTION.	Accommodation provided to relieve existing Thoroughfares.		
			Road for Main Through Traffic from Streets.	Road for Wharf Traffic from Water-side.	Railway Accommodation.
59	Mr. H. TURNER.	Embankment from Westminster to the Custom House Quay. Docks inside the Embankment.	Main road back of the Wharves and Warehouses.	—	—
97	Mr. R. TURNER -	Suggests an Embankment, with Open Wharves under a capacious Roadway for Through Traffic, and a Low Level Street to communicate between new and existing Wharves.	Main High Level Road for Through Traffic.	Low Level Road for Wharf Traffic.	—
40	Mr. JOHN WALKER	Embankment from Westminster Bridge to London Bridge, reserving a Tidal Basin in front of existing Wharves.	Roadway if required.	—	A Railway over Road.
20	Mr. E. B. WALMSLEY.	On North side only. Embankment from Westminster Bridge to London Bridge, with a Canal between it and existing Shore, to be entered by Locks.	Road on level of Trinity High Water-mark, and a Railway by the side, or with a High Level Promenade on Columns over it, with a Crystal Arcade.	—	Railway on level of Trinity High Water-mark.
—	Mr. H. WEBBER -	Commences the Embankment or River Wall opposite the Penitentiary, and carries it to Blackfriars Bridge. Proposes a terraced road or viaduct, and a Suspension Bridge to pass the front of Somerset House. The reclaimed space to be covered with flat girders, and a Subway for Gas, Water, and other Companies to be constructed.	—	—	—
27	Major J. F. WIELAND - -	Embankment from Westminster to London Bridge. Raised Esplanade above the Embankment from Hungerford to London Bridge 80 feet wide. Warehouses contiguous to the Embankment under Esplanade at the level of the Strand, &c. Shops along the Esplanade on inner side, and contiguous thereto, built on top of warehouses, and dwelling houses built over shops.	Road on level of Bridges, with New Streets opposite St. Clement Danes, and St. Paul's.	—	Railway on South Side.
22	Mr. T. E. WELLER	Embankment from Westminster to Queenhithe with a Quay and Railway, and Road one over the other—passing under Hungerford Bridge, the road on level with Waterloo Bridge and the railway under. Docks all the way inside the embankment, excepting abreast of Whitehall Gardens, Somerset House, and Temple Gardens.	Road from Whitehall Place to Blackfriars Bridge, crossing under Hungerford Bridge, and on level of Waterloo Bridge; communication at Norfolk Street.	Roadway on Viaduct.	Railway Station at Scotland Yard, Percy Wharf, and at Cannon Street.
27	Messrs. WILKINS, PAICE, and Co.	Embanks both sides of the River, from above Westminster Bridge to London Bridge. A Roadway to be placed close to the River, with Warehouses over, and a Railway under; and a second Road between the existing Wharves and the new Warehouses.	Roadway 30 feet wide, under proposed New Warehouses.	Roadway 20 feet wide, between existing Wharves and New Warehouses.	Railway passing from the Pimlico Railway under Victoria Street to the Embankment, and thence in a Tunnel to London Bridge, under the Warehouses and Road.
70	Sir WILLIAM WORSLEY, Bart.	Recommends that there should be Embankment Quays, and Drains built into them, with flights of steps, piers, lights, &c.	—	—	—
101	Mr. F. C. WORSLEY	Embankment on both sides of the River. Dam below London Bridge. Aqueduct Sewer on each side of the River, with a Boulevard, and architectural Houses.	A Roadway - -	—	Tramway.
—	Mr. V. WYATT -	Suggestions for constructing a Roadway by means of Screw Piles at a cost of £96,800 per mile.	—	—	—

presented for the consideration of the Commissioners up to the 8th of April.—*continued.*

Mode of Accommodating Sewer.	Extent of Encroachments on River at the several Bridges.					Estimated Expense.	Mode of defraying Expense.
	Westminster.	Hungerford.	Waterloo.	Blackfriars.	Southwark.		
Sewer down the new Streets.	—	—	—	—	—	—	—
—	—	—	Up to the first Arch.	First Arch and first two Piers.	—	Sewer, Embankment, 3 Streets, Shores, &c., 560,000*l.*; Railway 360,000*l.*	Sale of Railway, Shop Letting, Sewage Commissioners.
Sewer under Road.	—	—	—	—	—	—	—
Sewer under existing Shore.	—	—	—	—	—	—	—
Sewer to be laid in the lowest level of the bed of the river in an iron duct.	—	—	—	—	—	—	—
Sewer under Embankment.	—	Half way to First Pier.	One Arch.	One Arch.	⅓ of North Arch.	—	—
Sewer under Embankment.	Line of Houses of Parliament.	End of Hungerford Causeway.	One Arch.	One Arch or Two.	—	—	—
Sewer under Road, close to front part of Embankment.	—	—	—	—	—	£2,500,000	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

THAMES EMBANKMENT COMMISSION,

1861.

APPENDIX B.

MINUTES OF EVIDENCE.

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MINUTES OF EVIDENCE

TAKEN BEFORE

THE THAMES EMBANKMENT COMMISSIONERS, 1861.

Tuesday, 30th April 1861.

PRESENT :

The Right Hon. THE LORD MAYOR.	Captain BURSTAL, R.N.
Major-Gen. Sir JOSHUA JEBB, K.C.B.	HENRY ARTHUR HUNT, Esq.
JOHN THWAITES, Esq.	JOHN ROBINSON M'CLEAN, Esq.
Captain D. GALTON, R.E.	

The Right Hon. The LORD MAYOR in the Chair.

Mr. GEORGE POWELL examined.

Mr. G. Powell.

30 April 1861.

1. (*Chairman.*) Are you Secretary and Surveyor to the Waterloo Bridge Company ?—I am.

2. I believe you have a statement to make to the Commissioners with reference to the effect which you anticipate the embankment would have upon the bridge ?—I beg to hand in the following statement.

The same was delivered in, and read as follows :

"THAMES EMBANKMENT.

"Waterloo Bridge Office,
"30th April 1861.

"This subject is one of the greatest possible importance to the Waterloo Bridge Company, as their interest may be seriously affected by this measure, more or less, according to the extent and mode in which this work is to be carried out.

"Without knowing the plan which is to be adopted, and the mode in which it is to be carried into effect, it is, of course, impossible to give anything like a correct opinion as to how far Waterloo Bridge may be affected by it.

"It has been stated that it is intended to reduce the width of the river at Waterloo Bridge to the extent of about 280 feet, and to close or block up two arches of the bridge on the Middlesex side.

"If this plan be adopted, the consequence will be that the main and deepest part of the channel of the river (which is now on the Middlesex side) will be diverted towards the Surrey shore, and a very considerable increase of depth will take place throughout the channel passing under the remaining arches, arising from the reduced width as well as from the main current being forced over to the Surrey shore.

"To what extent this deepening will be carried it is difficult to say without knowing what is intended.

"The tops of the platforms of the piers upon which the masonry rests were founded 8 feet below the original low-water mark before the old London Bridge was removed ; but since the removal of that bridge the low-water line has been lowered about 4 feet 6 inches, so that the platforms of the piers are now only 3 feet 6 inches below the present low-water mark. Now as the depth of the river on the Middlesex side is at present from 8 to 9 feet at low water, it may fairly be assumed that at least there will be the same depth on the opposite side of the river, in which case the bottom of the river will be from 4 to 5 feet below the tops of the platforms of the piers ; and although the piers rest upon strong bearing piles, they were never intended to be left thus exposed to the increased action of the current ; neither do I think that it is right or safe that they should be so exposed ; and I further think that the proprietors of the bridge should be amply guaranteed and indemnified against any damage that may arise to the bridge in consequence of such operations. It is further intended, I understand, to construct two main sewers for draining the metropolis, namely, one on each side of the river considerably below the foundations of the piers and abutments of the bridge, which may be very injuriously affected.

"A roadway from the embankment, I understand, is intended to be made upon a level with the roadway of the bridge, and to communicate with it. This would seriously interfere with the traffic and the tolls of the bridge, unless it can be arranged by adequate compensation.

"I say nothing at present with regard to the injury in an architectural point of view that such a structure as the proposed embankment would have upon the architectural features of the bridge, and would detract most materially from its present simple beauty and magnificence.

"I think I have stated sufficient to impress upon the Commissioners the absolute necessity at all events of obtaining a sufficient guarantee or indemnity from Parliament against the parties who are to carry this work into effect from any damage that may arise to the bridge in any way from these works.

"The scouring of the bed of the river under the arches on both sides which took place some years since, in consequence of the Corporation of London having dredged small channels there, render it necessary to deposit several thousand tons of ragstone, the particulars of which I can explain to the Commissioners."

3. Have you anything further to say ?—It is right to explain to the Commissioners what took place at the bridge some years since. The Thames Navigation Committee set a barge to dredge under the first arch of the bridge. I have a letter from the city authorities, stating that they only took 180 yards of material from under that arch. It tapped the quicksand at the Middlesex side next to the abutment and the first pier, which are built upon quicksand, and in three tides a washing took place to the depth of 18 feet. On removing Old

Mr. G. Powell.
30 April 1861.

London Bridge, Messrs. Jolliffe and Banks had a very large quantity of rough stone which they brought up and deposited to reinstate the bed of the river to its former level. 3,200 tons were deposited under the first arch. On the Middlesex side, where the piles could be seen and the sand bubbling up between them, the scouring went to the depth of about 4 or 5 feet below the platform, and exposed the foundations of the bridge. The same thing occurred on the Surrey side; and the Thames Navigation Committee reinstated the bed of the river there, by depositing 4,065 tons of hard material. Kentish rag and chalk were deposited to protect these foundations. Since the removal of Old London Bridge, 9,045 tons of Kentish rag have been deposited, principally in the first and second arches on the Middlesex side, and in the first and second arches on the Surrey side. The company have also deposited Kentish ragstone round all the piers of the bridge, and no washing can affect them; but I fear that if this hard material were removed a washing might take place, and a very serious injury might accrue to that structure.

4. You speak of a platform; is there a timber platform?—I will explain in a very few words how the foundations of that bridge were put in. I saw all the foundations of that bridge put in; they were built in coffer dams; piles were driven to the depth of 24 feet on the average; there were then longitudinal and transverse sleepers spiked upon the piles, and all the interstices were filled up with ragstone and concrete, and upon that the solid planking of the floor was laid. All the foundations of that bridge are built upon piles with a floor. I have a plan here showing it (*producing a plan*).

5. (*Captain Galton.*) The piles were driven 22 feet below the beds of the river?—Yes; 22 to 26 feet into the bed of the river, and on the Middlesex side deeper.

6. (*Chairman.*) Do you happen to know at what level you came to clay on the Middlesex side?—We had great difficulty in putting in the foundation there. I saw piles go with one stroke of the monkey 12 feet.

7. You did reach the clay?—Yes.

8. You do not know at what depth the clay is?—No.

9. Have you any other drawings but this, which shows the tops of the piles and the platform?—No. Here is a plan showing the soundings of the bed of the river. At low water there is only one arch navigable, which is the second arch. It appears to me that it would be a complete interruption of the traffic of the bridge if the bridge were interfered with as shown by this model; it must cross the footpaths.

10. (*Captain Galton.*) Do you think that the removal of the shoal which exists near the second pier from the south side would be injurious to the bridge?—I think if sufficient precautions were taken to secure the piers by sheet piling or otherwise before the deepening took place the bridge might be secured.

11. Is not it the case that that shoal was created to some extent by material being thrown in by the bridge company?—No; that shoal was there before the bridge was built.

12. (*Captain Burstal.*) You stated that the second arch only was navigable now. Is there any reason why the small shoals which exist below the third arch and above it should not be removed to a depth at low water sufficient for the purposes of navigation?—There is not any shoal below Somerset House. The only thing necessary is to protect the foundations of the bridge. Evidence has been given with regard to the effect of this embankment on the bridge on several occasions. Every engineer has said that there would be great difficulty at Waterloo Bridge both on the Surrey and the Middlesex sides. Mr. Page particularly mentions that he apprehends danger on the Surrey side by dredging at Waterloo Bridge.

13. Supposing two arches were closed by the embankment, do you apprehend danger to the foundations while the works were in progress?—The construction of that embankment, unless it caused a deepening of the bed of the river through the channel, would not at all affect the bridge.

14. You apprehend that there would be an additional scour in the third arch, so as to tend to undermine the foundations?—I think necessarily so. If you embank it you would lessen the area of the tidal water.

15. Do you think that the shoal that exists both below the third and fourth arches on the Surrey side and above them could be reduced to a sufficiently low level to improve the navigation, and also to insure the foundations from not being damaged?—Yes; to the extent of perhaps four or five feet.

16. That would bring it to low-water mark?—Yes.

17. You think even with that something would be required to put round the present piers of the bridge?—Yes.

18. (*Sir Joshua Jebb.*) You say, "If this plan "be adopted, the consequence will be that the main "and deepest part of the channel of the river "(which is now on the Middlesex side) will be "diverted towards the Surrey shore, and a very con-"siderable increase of depth will take place through-"out." The form of the river appears to me to be against that hypothesis. Would not the current still run against the embankment on the north side, and not on the south side, owing to the form of the river?—If you lessened the tidal area it would necessarily have the effect of deepening the channel towards the Surrey side; it would increase it more in the centre, no doubt, but to a considerable extent it would affect the Surrey side arches. The deepening would commence at about the third or fourth arch, but that deepening would go on. The company have not the slightest feeling with reference to this embankment scheme, except that they think it will interfere with the appearance and stability of their structure, which has been said to be the finest structure in the world.

The witness withdrew.

Mr. Robert Baxter on Mr. Fowler's Plan.

Mr. R. Baxter.

Mr. Baxter.—Mr. Fowler's plan, which has been deposited in Parliament, commences at Westminster Bridge, and proposes to embank the Thames from Westminster Bridge to Blackfriars Bridge. The model of that plan is now upon the table before the Commissioners. It comprises an embankment which will take from the bed of the river precisely 48 acres 3 roods and 31 perches, the quantity of water which will be reclaimed. We have considered it necessary to provide for the continuance of the wharves and the approaches on the part of the vessels navigating the Thames to these wharves, and by means of the embankment those wharves will be converted into docks approached by openings, there being one or two openings into each dock, and the docks thus left for the accommodation of the wharfage will be 12 acres 2 roods and 16 perches.

Chairman.—That is water?

Mr. Baxter.—Yes. We consider that that appropriation of 12 acres of water in the shape of docks will render the accommodation of those wharves more perfect even than it has been hitherto. There will be water at periods when there would be otherwise nothing but dry ground when the tide is out. Gates must be interposed between the docks and the Thames. We consider that those docks will be more

serviceable for the purposes of the wharfingers than is their present embankment and openings upon the Thames, and therefore that there will be no case for compensation on the part of the wharfingers as against the parties making the embankment. The next feature in the plan is the roadway. We propose to make a roadway of 80 feet wide, with a footpath adjoining of 20 feet, making a total width of 100 feet, that roadway commencing at Westminster Bridge, continuing down to Blackfriars Bridge, and there joining Bridge Street, Blackfriars, so that the public will have the benefit of a new street from Westminster into Bridge Street, Blackfriars. Of the total width of 100 feet 20 feet is appropriated for footpath and 80 feet for carriageway. That appropriation will take up 15 acres 3 roods and 13 perches. It appeared to the promoters that whatever plan was adopted for the embankment it would necessarily involve the making of a new street. Another trunk communication between Westminster and the city is obviously required, and in no way could it be made with so little expense and of such a width as upon the top of the Thames Embankment; and in referring to the advantage of such a street I would only allude to Cannon Street in the city, the new street that has lately been made by the corporation. The cost of that street is something fabulous. I will give you the figures presently. Of course if you measure the length of Cannon Street it is very much less than the length of the roadway proposed to be here constructed on the top of the embankment; and if the figures of Cannon Street were applied to this roadway, and the benefit to the public measured by the cost of Cannon Street, it would amount, as you will hear presently when I get the figures, to a very large sum indeed. The next feature of the embankment which is proposed by Mr. Fowler's plan is the railway, having a small passenger station at Westminster Bridge, running along the whole course of the embankment, and joining the London, Chatham, and Dover Railway at Bridge Street, Blackfriars. By means of the London, Chatham, and Dover line it will pass into the city, and to the new terminus proposed to be made there at the back of the Bank of England; and it did appear to us that such a communication was peculiarly wanted, and would be more extensively useful even than the public road to which I have already adverted. Men of business in Westminster find the obstruction in the way of access to the city to be so great that no man of business is summoned to the City except with great misgivings whether the whole of his morning will not be consumed in getting to the city, doing his business there, and getting back again; whereas if we had railway communication we should get into the train at a stated period, pass in ten minutes to the city, transact our business there, and joining the railway at the other end, return to Westminster. The city would become available for purposes of business, which it certainly is not now to men of business in this part of the town. In order to prevent the railway being considered objectionable, we propose, in front of the great houses in Whitehall Gardens, to cover it over, and let the surface appear as garden ground. When we get to that part of the Thames occupied at present by wharves, and which will be occupied even upon our plan by the docks, it is unnecessary then any longer to cover the railway. The railway will then be open, and it will pass open all the way to Blackfriars Road, where it will join the London, Chatham, and Dover Railway. I am aware that in some minds there is a prejudice against the railway, but the only prejudice that can be felt upon the subject is that it will be an annoyance. If covered over where it passes in front of the gentlemen's residences in Whitehall Gardens there would be no annoyance whatever from it. After it has passed there there are no gentlemen's residences that could feel the annoyance, and there would be nothing of which complaint could be made till perhaps you come to the Temple Gardens, and when you come in front of the Temple Gardens it will be seen by the model that the embankment itself, with the public road, which is certainly indispensable in any view of such a project, would be as high, and as great an eyesore, if it is to be treated as an eyesore, as the railway itself, and to have a railway by the side of a public road is not in any degree aggravating the complaint which would be made from the owners of the Temple Gardens, who would be desirous to have the plain water before them, as they have now, instead of that embankment. All we can say to the Temple Gardens is this, that though now at high tide they have a fine sheet of water before them, and the parties promenading in the gardens have the pleasure of passing their eye over a level sheet of water, yet after the tide has gone out there are most offensive mud-banks left in front of the Temple Gardens, and when the embankment is made those offensive mud banks will be entirely removed, and they will exchange the mud-banks for a healthy road, and the nuisance will be removed, at the expense of some degree of noise in passing the gardens, and some degree of interruption to the prospect in looking across the Thames. But against that we have to set a very great advantage; we shall add to the area of the gardens so much as is equal to at least 50 per cent. of the present space enjoyed by the gardens; and if the railway be constructed upon arches, and the road be constructed upon arches, it will be possible for parties still to pass to the Thames, if they desire to do so. But it would be impossible to construct an embankment of the Thames without raising the structure above the level of high-water in front of the Temple Gardens, unless you are content simply to embank the Thames to high-water, and let the last few inches of high-water flow over the embankment, using it neither for a public carriage road nor for a railway. No one would be content that we should have an embankment without giving to the public the advantage of a fine street; and if that be the case, of necessity it must raise its head above the level of high water in front of those gardens; and putting a railway alongside the road, the level of which does not rise above the road, can create no additional nuisance; and therefore there can be no legitimate objection to the railway passing the Temple Gardens. When we get beyond Temple Gardens the premises are trade premises, from which no complaint could come in the formation of a railway. The figures which are given me respecting the cost of Cannon Street are these:—Cannon Street is 594 yards long, and was constructed at the cost of 500,000*l.*, being 844*l.* per lineal yard. The roadway we propose to devote to the public by the construction of the embankment, instead of being 594 yards in length, is 2,206 yards in length, that is, nearly four times the length of Cannon Street, and if you multiply the 500,000*l.* by four you get 2,000,000*l.*, which would be the relative cost of such a street as this if it were made through premises as valuable as those of Cannon Street. I need hardly dwell upon the fact that if a street of this character can be made at a cost of one fifth of that of Cannon Street it is a great gain to the public, who have the accommodation of such a street at one fifth the cost. Taking any view of the cost of the embankment, that would be the result of the formation of the street in question. I think I have taken now the docks, the roadway, the railway, and there will be a residue of land unappropriated for any of those works to the amount of 15 acres on the road, consisting of a strip of land of about three quarters of the length of the embankment, intervening between the roadway which is formed upon the edge of the river and the docks and contiguous property now fronting upon the river.

Mr. R. Baxter.
30 April 1861.

Chairman.—Available for what?

Mr. Baxter.—For any purpose that may be thought fit. If that were made available for building purposes it would be extremely valuable, but if it were left for ornamental purposes, so as not in any

Mr. Baxter.

30 April 1861

manner to interrupt the passage of air to and from the river or from the adjoining property, then it must be sacrificed as a boon to the public, as a matter ef health and accommodation to London, instead of being sold to realize any amount in return for the outlay on the embankment. We have shown it upon the model as entirely ornamental ground, not proposing to put any building upon it, thinking that the ventilation of the metropolis from the Thames would be less interrupted, and that whatever property may adjoin would have less cause to complain if it were left in that state. I have now described all the works, the direction, the quantity of land which is to be reclaimed ; and now a word as to the cost.

Chairman.—You have given us the quantity of water for the docks, namely, 12½ acres ; do you give any additional land for wharf purposes ?

Mr. Baxter.—No. We do not propose to interfere with the wharves at all. We do not cut off any frontage, except near Blackfriars Bridge, I think near the City Gasworks, and upon some other property there, in order to make a junction of the road with Bridge Street, and of the railway with the London, Chatham, and Dover in Bridge Street. We have to run into property adjoining the Thames, and have to take that, and make compensation; but in no part of the Thames do we interfere directly with the wharves. We propose to put a new wharf front all along.

Chairman.—You take 50 acres or thereabouts for your works, and of those 40 acres you apply 12½ or thereabouts for the purpose of trade; all the rest would go for the road and the railway and the ornamental grounds.

Mr. Baxter.—Entirely. The docks 12 acres 2 roods 16 perches, the roadway 15 acres 3 roods 13 perches, the railway and station 5 acres 1 rood 2 perches, and the ornamental ground 15 acres 1 rood, making 48 acres 3 roods 31 perches precisely the area we enclose. Now as to the expense. Our estimate of the expense, without providing for compensations, is 700,000*l.*; not made at random, but by a very careful estimate, and upon a consideration of plans by experienced engineers, who have all of them gone over the estimate to be assured of its correctness. Three engineers connected with the undertaking have each of them gone over it, and conferred together, and satisfied themselves, not only upon their own judgment, but by reference to the contractors, that the work may be done for that amount.

Chairman.—Including the railway ?

Mr. Baxter.—Including the railway. If we have to provide for compensation we apprehend that we shall have to add possibly another 200,000*l.* to that estimate, and it must than be calculated at 900,000*l.* including all compensation.

Chairman.—That 200,000*l.* perhaps is not the result of a careful investigation as the other is ?

Mr. Baxter.—There are no elements upon which to make that careful investigation. We have it considered by one of the best authorities in such cases ; but your Lordship is aware that in nothing is there so much uncertainty as in the item of compensation. When you touch property which you think of very little value there spring up hydraheaded claims of most appalling magnitude. I have seen thousands heaped on thousands when one would have expected that nothing but a few hundreds would be the compensation. And all that has to be fought, and very severely, before arbitrators or before juries. In fact our law of ascertaining compensation is very unsatisfactory indeed, though we can get no public man to take up the question, and put it upon its right basis ; so that we cannot be very accurate upon that. I should state that in the Bill as deposited we propose to leave the compensation in the hands of the public body entrusted with the disposition of the funds. Whether that be the Board of Works, or the Metropolitan Board of Works, we have proposed to leave the compensation in their hands, and to contract for a given sum to make the embankment.

Chairman.—You propose to give up to the Woods and Forests the reclaimed land, and in consideration of that that the Government should pay the compensation ?

Mr. Baxter.—That is the proposal of the Bill.

Chairman.—Seeing that you have no land available for sale I hardly understand how that is to be carried out ?

Mr. Baxter.—The whole of the 15 acres would be available for sale, provided it were not given up for ornamental purposes ; and supposing that you had the power to sell it to the Board, no doubt it would sell at a very high price, and yield a large sum of money. One object of the embankment I have yet to state ; namely, providing a site for the main sewer of the metropolis. The Commissioners are aware that it has been proposed to carry the drainage of this part of the metropolis by a main sewer down to a common outlet, and the question has been whether that main sewer should be made through existing streets, through the Strand and Fleet Street, or whether it should be made by the side of the Thames, or under the embankment of the Thames. Against the making it through the public streets is to be set the public inconvenience of interrupting the traffic during the making of it ; and what is of far more consequence, the danger in consequence of tapping the quicksand which is known to underlie the whole of this part of the metropolis, and the danger of injuring the houses during the progress of the construction of such a main sewer. Those two inconveniences would be obviated by constructing it under the Thames embankment ; and, as against the construction of it under such an embankment, there is nothing to be said. The sewer would lie probably under the road 80 feet in width during the whole length, but any part of the embankment would be available for the side of the main outlet sewer, and in constructing it there would be no serious interruption of any trade, and no danger of letting down any buildings ; and it is no doubt one of the great features of the embankment that it would provide a site for the main sewer without the danger or inconvenience to the public to which I have adverted. It will save to the Metropolitan Board of Works constructing the sewer the compensation they would have to pay to the adjoining householders, and to parties whose trade would be injured in the construction of the sewer. It is proposed by the Bill to ask the Board of Works, assuming that the Metropolitan Board of Works were intrusted with the money for the construction, or the Woods and Forests if they are intrusted with the money for the construction, for 400,000*l.*, in return for which they receive a road 80 feet wide, a site for the sewer, an embankment completely made, and all the nuisances now attaching to the Thames removed. For that they propose to ask of the public money, through whatever hand doled out, 400,000*l.* They next propose to find 300,000*l.* themselves, for the purpose of completing the railway work, and that 300,000*l.* would be the cost of the railway, which would be the only part of the embankment that would produce a revenue after the whole work is completed. The cost, therefore, to the public, of this scheme, would be 400,000*l.*, *plus* the compensation of 200,000*l.* Assuming that the land is to be given up as ornamental ground, instead of being used for building purposes, that would be 600,000*l.* of the public money as the cost of the construction of this great work. I should mention, before leaving the subject of the Bill that has been deposited, that the Bill deposited in Parliament, and the notices which were given in respect of that Bill, have been so framed, that, supposing this Commission and Parliament should prefer, that instead of the work being done by a private company it should be done by the Board of Works or the Woods and Forests, or any other hand, the notices for the Bill enable the measure to be passed in the present session ; and I may state, on the part of the Company, that they are quite ready to retire from the promotion

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of the Bill, and to hand it over to the Board of Works, or any other body which Parliament may think more fit to execute the work, so that it may at once be proceeded with, and that parliamentary powers may be taken for it. You are aware that, supposing we had not deposited the Bill, there would have been no power to commence the construction of a work like this till Parliament next year had been applied to for power to take the property and construct the work. Our notices enabled the thing to be done this session, and are so large that the Bill can be altered to enable the Metropolitan Board of Works to do it, or the Woods and Forests to do it; and we are quite ready, if Parliament thinks it better that it should be done by a public body, to hand it over to that body, and to hand over our notices, that the work may at once proceed. We felt that it was a work which had been long lingering in Parliament; that years and almost generations were passing away with no appearance of progress; that even last year, after the Select Committee reported in favour of some such work, no public notice was given by any public board for the construction of it, and it would have been deferred again for another year, with all the accidents attaching to deferring a public work like this, unless the notices had been given which we gave. We are in the position now of being ready to hand this over to any party whom Parliament may think fit to confide it to, and the parties can execute it without further delay.

Chairman.—In that case what would become of the railway?

Mr. Baxter.—Parliament would have to determine whether they desired the railway or not. There is no question that whatever may be determined by this Commission (I speak with all deference to the Commission, and convey no affront to them in saying it,) the House of Commons will insist upon referring to a Select Committee whatever plan is approved of by this Commission. They have never taken any other course in public works of this character. They will sit upon the question, and if they approve of the plan which is selected by this Commission it will be adopted. If they select another plan instead of that which is approved of by this Commission, the one selected by this Commission will be superseded, for Parliament is the final court of appeal, and without a Select Committee of Parliament this measure will not be passed. Therefore whatever is done must receive the sanction of Parliament, not only in its outline but in its details.

Chairman.—In the event of the railway not being made, and the whole thing being done by any other body which might be selected, your company would cease to exist?

Mr. Baxter.—Quite so. We are quite willing to retire if Parliament should think that the matter would be better executed by a public body than by a private company. We make our bow, but in so doing we hand over to the public body the means of getting parliamentary sanction at once, and proceeding with the works without delay.

Chairman.—Upon some condition, I presume?

Mr. Baxter.—Upon the condition of paying the cost incurred up to that time.

Chairman.—Could you state to the Commission anything like what they might amount to?

Mr. Baxter.—Scarcely. It would be no greater amount than would have to be incurred by the public body itself in going to Parliament another session. There would be the notices in the papers, the notices to all the landowners, the deposit made in Parliament, and the incidental engineering expenses. Mr. Fowler has been obliged to attend a Committee of the House, but he would be glad on another occasion to attend the Commissioners, and give any explanations they may desire. The other engineers are here now, and will give any further explanation which you may wish.

The witness withdrew.

Mr. George Willoughby Hemans examined.

Mr. G. W. Hemans.

19. (*Chairman.*) Have you anything to add to Mr. Baxter's statement?—Mr. Baxter has so thoroughly explained the whole project that there remains little for the engineers to say, except to answer any questions which you may wish to put.

20. With regard to the railway, would it be on the same level as the main road?—It would in all places, except at the terminus at Westminster Bridge, where it would be necessary to sink it in order to get underneath Whitehall Gardens; in all other places the railway and the road are on the same level; both rise and fall together.

21. About what length of covered railway have you?—Of the covered portion, which is from the extension of Whitehall Place to the end of the station, the length is about 407 yards.

22. It emerges by a gentle gradient so as to get up to the level?—It rises then to get to the level of the road. The gradients vary. The steepest is 1 in 62. They vary from that to flatter gradients. We have all the details, if you wish to have them.

23. And the railway and the road run side by side?—They are divided by pleasure grounds, about 120 feet wide in the widest part. They extend nearly the whole way between the railway and the road.

24. You do not apprehend that there would be any danger arising from horses on the main road being frightened by the trains?—We think not. There are plenty of instances of railways running along roads for considerable lengths, closer than this. I have one case of a railway running seven miles along a turnpike road, and much closer than this. If any danger did arise, of course the trees which there would be between, if they grow well, would form a screen. Then there is the parapet wall, which would be some protection. It is not thought necessary to screen a railway higher than the height of the eye of a horse.

25. (*Captain Galton.*) Do you propose to continue the railway eventually beyond the terminus which you show at Westminster Bridge?—That has not been lost sight of There is no immediate proposal of that kind, but the levels are such that it would be possible to do it.

26. In what way would it be continued?—It would be a covered way the whole way, to join any part of the Pimlico railway. It may join near the station. The greater portion of it would have to be a covered way.

27. Would it pass under Parliament Street?—It would have to pass under Parliament Street, and probably a portion of Great George Street. The levels are such that we know the thing can be done.

28. There was a line deposited this year, not in connexion with this scheme, taking that direction, was there not?—It has not been considered at all in connexion with this company, but it has not been lost sight of in an engineering point of view.

29. At that station at Westminster Bridge do you anticipate traffic?—That station at Westminster Bridge will be put in connexion with almost all the railways in England. By means of the Metropolitan Railway it will be in connexion with all the northern railways; and it will be connected with the London, Chatham, and Dover; and so it will be a central station.

30. You anticipate an immense traffic?—We should have a very large traffic, not only for people going to the city (because a passenger entering there would get out at Finsbury Circus, so that a great city traffic might be taken that way), but it ought to be a good central station for all the railways in the kingdom.

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31. Do you think it will interfere much with people going along the embankment to have to pass close in front of a station with large traffic?—There is ample width there. The station does not encroach upon the road. New Westminster Bridge is 80 feet wide, and the space left would be fully 40 feet, so that there would be 120 feet in front of the opening. The approach for cabs is all sidelong. The passenger entrance might be in the front. Those details are not actually settled. That 120 feet might be as easily made 150 by shortening the station.

32. It is merely a passenger line?—Certainly.

33. You contemplate only communicating at three places with existing thoroughfares?—Only two; one in the middle, and the Westminster terminus. At the other end it runs into Farringdon Station.

34. I was speaking of the road. But to continue, with respect to the railway, you have one intermediate station between Westminster and Farringdon Street?—Yes.

35. But for the road you contemplate having three?—We have only shown one, which is at the extension of Whitehall Place; but it would be easy to run up to Waterloo Bridge with inclines; that would add a little more to the expense. The contingencies might admit of doing it; but it would be necessary to do it after the embankment had been made some time.

36. Do you propose as part of your scheme to extend Earl Street into the embankment?—No; it is not impossible to do it, but the railway presents some difficulties in the way of connecting many of those streets. If there were no railway no doubt it would be more easy; but it is not impossible to connect them.

37. Do not you consider that it would be an advantage to have as many streets as possible connected with the embankment, so as to relieve the existing thoroughfares?—The advantages conferred by the railway would be greater than would be conferred by the cross connections of those streets. Most of them are narrow, and not likely to become great thoroughfares. It must not be supposed that I want it to be inferred that those streets cannot be connected. There is space enough to get over the railway by making an incline sideways. You could not go direct. You could make side approaches to get over the level of the railway.

38. Have you considered carefully the question of the docks?—They have been as carefully considered as it was possible to consider them.

39. You propose one entrance to each?—The large dock has two; the others have one each.

40. Do you think that there would be any danger of mud forming in them?—I should think there is little doubt that mud would enter those docks; but by making the bottom of the dock 12 feet below Trinity high-water mark, and identical with the sill on the top of the sewer, there would be no difficulty in sluicing the mud out, and letting it through over the sill, by opening the gates.

41. What size are your dock entrances?—25 feet, as shown upon the designs, but they might be 30 or 40 feet quite as easily.

42. Who would bear the expense of keeping the docks clear of mud?—That is a point which has not been thoroughly considered. I am scarcely prepared to say what arrangement ought to be made for that. If the company carried out the work, and had the remuneration for it, it would be their duty to do that, as being part of what has occurred in their work. I might explain that this model is all drawn to scale; the elevations of the houses are shown correctly, and it shows how the view from the houses is affected.

43. (*Captain Burstal.*) Would not a great many houses be shut out entirely from a view of the river, particularly when the water is below high-water mark? For instance, take the two main places, the Temple Gardens and Somerset House?—At the Temple Gardens there are no buildings the main windows of which are not above the height of the road. Take Somerset House; all that great range of buildings is far above the railway.

44. Take the lower part of Somerset House?—That is all dead arches. Take Adelphi Terrace; that is all clear over the railway.

45. Supposing these docks to be the only means of access to the wharves, do you not think that if the opening were even 40 feet at right angles with the run of the stream, and if the stream were running at the rate of three miles an hour, it would be a difficult thing for barges to be got into those docks?—I should think that there would be no difficulty about it; it is done every day in docks. If you recollect, at the Grosvenor Canal the entrance is at right angles. There is another kind of entrance there above the Grosvenor Docks, where they come in at right angles. All the docks in the Liffey are at right angles, and the tide runs pretty fast there. The Royal Canal, running into the Liffey, to which I am engineer, has an entrance at right angles to the river, and I never observed any difficulty; there are warping paths proposed along the docks, and if warping posts are put there there would be no difficulty in the thing.

46. Would not the barges take longer in getting to their destination, their destination being the wharf; would not they have to wait to take their turn to go in, and to wait to take their turn to come out, so that the wharfingers would be charged with additional expense for detention?—There is not the slightest doubt that a number of barges could not go in together, nor broadside on; but we propose to afford high water at all times, which is considered to be a compensation for the delay.

47. There would require to be a staff of people employed to attend to those locks and entrances?—Yes.

48. By night as well as day?—Yes; but the men in the barges would bear a hand. A great deal has been said about altering the tidal area of the current, but part of the project is to equalize the section of the river, so as to produce an equal current and better navigation, by taking away the shoals.

49. To what depth do you think you could deepen, in order that you might compensate for the loss of tidal water?—It would not be possible to deepen to any great depth without danger to the bridges; but I do not think that any engineer contemplates giving an equivalent for the whole of the tidal water taken away; but as far as we should be allowed to deepen under the Thames Conservancy, all that we should get out of the river here would be useful to us for filling.

50. As far as you could dredge with safety to the bridges?—Yes; as far as we could dredge with safety to the bridges, under the directions of the Thames Conservancy.

51. You do not anticipate any difficulty in flushing those docks, and getting rid of the mud?—No; they are very shallow docks, not more than 12 feet, and the mud could run over the sill, I should think, with raking and the usual plans.

52. By raking the mud it must go out into the Thames again?—No doubt, if it is taken that way; but if we got five feet of water at low water along the foot of the wall and with the tidal current, it would be a long time before it accumulated to any depth.

53. Have you any information as to the amount of mud deposited in any docks in London?—We have seen evidence upon those deposits. I forget the rate per annum, but I am quite aware that there is a regular deposit of mud in all those docks.

54. Are you aware that there is a deposit to the extent of four or five feet per annum?—I am not aware that it is so much as that; a good deal of the mud is due to the sewerage in the river, and if that were taken away there would be less mud. No doubt some mode must be adopted of getting rid of that

mud; one mode would be to shut up part of the tidal water in the dock itself, and sluice it out.

55. (*Mr. M'Clean.*) Would the wharfingers be satisfied with the docks in substitution for the present system?—There is a great difference of opinion among them. I have heard that some of them express themselves as very much pleased with the idea of floating their barges at all times of the tide.

56. (*Mr. Hunt.*) What would be the height above Trinity high-water mark of the roadway between Waterloo Bridge and Hungerford Bridge?—Between Waterloo Bridge and Hungerford Bridge, which is about the highest point, it would be 18 or 19 feet above Trinity high-water mark.

57. What would be the height of the wall from its foundation to the top?—The highest part of the wall from its foundation to the top would be about 50 feet.

58. What would the wall be constructed of?—I have a drawing of it here (*producing it*). The intention was to construct the lower part with an iron facing, backed with concrete. It may be looked upon as a longitudinal coffer dam, the front of which would be iron, the back timber, and the interior filled with concrete till you get above the line of low-water mark. After that it would be a brick wall faced with stone, if there were means sufficient to do it; but our estimate is for blue bricks.

59. And there would be a parapet also?—That would be stonework. The bed of concrete is 15 feet; the first course of brickwork is 11 feet 6. The right-hand section shows the mode of constructing the wall.

60. Would there be a coffer dam?—No coffer dam is necessary; it would be tidal work, of course, but no coffer dam would be required.

61. (*Chairman.*) You make your iron piling serve the purpose of a coffer dam?—Yes. We do not exclude the water, but we fill in with concrete, which is kept together with an iron front and a wooden back.

62. (*Mr. Hunt.*) Have you formed any opinion as to the value of the reclaimed land per foot lineal, of which Mr. Baxter says there would be 15 acres?—We have had no estimate made of it.

63. You would not think of building in front of Somerset House?—No; we never contemplated building in front of Somerset House, or anywhere else. Warehouses were at first contemplated on a great length of this reclaimed land, but, on consideration, we gave up the idea.

64. So that the credit of reclaimed land we may put down as nil?—It does not exist in our scheme, except as to the pleasure ground for public enjoyment.

65. You suggest an incline from the road up to Waterloo Bridge. Would not that inconvenience the traffic on Waterloo Bridge?—No. The through traffic would go under the arch; it would be only that traffic that wanted to enter the Strand or to get on to Waterloo Bridge that would require to use that incline.

66. I understood Mr. Baxter to say that the cost of the railway, *per se*, was 300,000*l.*?—No; that is the sum which we propose to provide; the actual cost of the railway would not be so great.

67. What would be the actual cost of the railway?—The cost of the railway alone would be 102,865*l.*

68. For the construction complete?—Yes.

69. Without stations?—For the railway with stations, covered way, viaduct in Temple Gardens, &c.

70. (*Captain Galton.*) With the dock wall on one side?—We have not taken the wall, but we have taken the whole of the expenses connected with the railway; the railway could not be completed alone without a double wall; we have taken the embankment altogether, and the cost of the railway upon the embankment.

71. It is for laying the rails upon the embankment?—It is more than laying the rails; it is building the station and the parapets, and there are other things which belong to the railway. There is a heavy bridge over the approach to Blackfriars Bridge. All that is included.

Mr. Fulton.—And it includes an expensive viaduct.

72. (*Mr. Hunt to Mr. Hemans.*) Supposing the commissioners recommend that road to be carried out without the railway, how much would you save by omitting the railway?—It is quite clear that every embankment must have two river walls, and it is a question whether a railway should be inserted between those river walls or not.

73. You would save 102,800*l.* by not having the railway?—Yes.

74. (*Mr. Thwaites.*) I understood Mr. Baxter to state that your plan offered facilities for the construction of the low level sewer. Do I rightly understand the map which you have placed in my hand, that you terminate your embankment at Blackfriars Bridge?—It was always contemplated that it would be ultimately extended, and the Company which is now formed thought it better to confine their operations to the most important part of the work first, without losing sight of extension hereafter; indeed in the original drawing the extension was laid down.

75. The plan now stops short at Blackfriars Bridge?—Yes.

76. How do you offer the necessary facilities for the construction of the low level sewer, stopping short at Blackfriars Bridge?—We consider that obviously the great difficulties in the construction of the low level sewer would be Fleet Street and Ludgate Hill, and all those difficulties we clear, because the sewer would run from Westminster all along under the railway as far as we go, and after leaving the railway it would fall into the channel which I believe was marked out by your Board, namely, Great Carter Lane, unless that intended new street out of Cannon Street were carried out.

77. One great advantage which Mr. Baxter took credit for is only half realized?—I should say more than half realized, because by our plan we get rid of those formidable points, namely, the obstruction of Ludgate Hill, Fleet Street, and the Strand, and if that new street were to be formed, namely, Lower Earl Street, the sewer should go along that street. If it were not formed it would go along Great Carter Lane, not touching Ludgate Hill at all.

78. (*Mr. Hunt.*) Carter Lane is very narrow, is it not?—That was the line which the sewer was intended to take, and it could go that way if we did not carry the embankment above Blackfriars.

79. (*Mr. Thwaites.*) You spoke of the construction of this wall without forming a coffer dam, by means of iron plates; how do you propose to construct a sewer without a coffer dam?—The sewer would not be constructed till the wall had been made sufficiently high to make the sewer in; we should then put in a sufficient amount of clay to staunch the interior, and then construct the sewer.

80. Would the sewer be through the docks?—Through the lock. The lift of the lock would be the top sill of the sewer.

81. The sill would be level with the top of the sewer?—Yes, a strong wooden sill. The sewer would be slightly depressed there, formed of iron pipes instead of brick arching. That would be at the level of the bottom of the docks and the lift of the lock.

82. You do not propose to make a syphon there?—No. The invert would remain at the same level, but the shape of the sewer would be two ovals instead of the usual form. I have it on a drawing (*producing the same*). Instead of a six-feet arch there would be two flatter openings. The width of the entrance would be 5 feet by 4 doubled, instead of 6 feet, and flattened out a little.

83. If I understood Mr. Baxter rightly, we were to have the privilege of building a sewer at our cost within your embankment, on payment of the modest sum of 400,000*l.*?—The actual cost of the sewer is very much smaller.

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84. I understood Mr. Baxter to state that that was exclusive of the cost of the sewer; that we were to have given us in lieu of the sum I have named, the site of the sewer?—The metropolis would get more than the site of the sewer. It would have the road, esplanade, and pleasure grounds.

Mr. Baxter.—For 400,000*l.* you would get a street 100 feet wide from Westminster to Blackfriars, and besides that a site for a sewer.

Mr. Hemans.—The actual cost of the construction of the sewer is only 23,000*l.*

85. (*Mr. Thwaites to Mr. Hemans.*) Have you considered how the several sewers along the banks of the river across your docks are to find their way into the main sewer?—The connections would present no difficulty during the construction of part of the docks. Part of the present wharfage must be temporarily intercepted, and at that time connections could be made with the sewers without any difficulty.

86. I understand that as far as your works are concerned they would offer facilities for the construction of the sewer up to Blackfriars Bridge?—You may say up to Great Carter Lane; it would deliver the sewer as far as our works extend. Beyond Chatham Place you may call it. That would clear Ludgate Hill.

87. (*Chairman.*) You cross Chatham Place by a bridge?—Yes; but in crossing that we are obliged to buy warehouses on both sides, and where we clear the way we could construct a sewer under our works.

88. Would there be no possibility of carrying the railway below the surface of Chatham Place?—No, I think not. The great point is to unite it with the London, Chatham, and Dover and the Metropolitan railways. That advantage would be lost if an underground level were taken.

89. You have shown dotted lines from your embankment as far as Southwark Bridge, showing what it might be if continued on?—Yes; it would pass under Blackfriars Bridge, and the London, Chatham, and Dover bridge, as it does under Waterloo and Hungerford bridges.

90. What deterred you from carrying it further?—We thought it better to raise only capital sufficient to do the most important part of the work. There is nothing in the work which does not admit of extension.

91. (*Mr. Thwaites.*) What relief, in your judgment, would this scheme afford to the traffic of Ludgate Hill?—The traffic to Ludgate Hill would be entirely relieved if that new street adjoining Chatham Place were carried out which is projected; it would deliver the road traffic into that street.

92. That is no part of your plan?—That is no part of our plan.

93. You are in fact bringing a large number of people to the foot of Blackfriars Bridge, discharging them at Chatham Place, and thickening the traffic in Ludgate Hill, instead of relieving it?—If there were no hope of that street being carried out, which we believe is practically settled, it would be so, no doubt; but it would not be worse than it is now.

94. If your railway is to pay it certainly would be worse, for there would be a large influx of persons going by the railway?—Persons going by the railway would go to Farringdon street; but the great probability is that the greater number of them would go to Finsbury Circus.

95. Do not you propose a station at Blackfriars Bridge?—No; Farringdon Street. This is a plan (*producing it*), showing the connection of this line with all the lines of the metropolis, showing the extension through Finsbury Circus.

96. Have you contemplated what would be the tariff of charges?—No; that has not been gone into.

97. Have you taken into consideration the amount of competition which you would have to contend with with the penny boats?—Yes; that has been considered.

98. Have you arrived at the conclusion that it would be a paying scheme?—It seems so extremely obvious, there being a station so central and convenient as that at Westminster connecting with all the railways, that an immense number of people must go by it, that we have not thought it necessary at present to go into the details of traffic; certainly there would be a great amount of travelling upon it, not for going to the city merely, but for joining other railways. The saving of time would certainly be of greater importance than the small sum that could be charged upon it being only 1½ miles in length.

The witness withdrew.

Mr. Hamilton H. Fulton, examined.

Mr. H. H. Fulton.

99. (*Chairman.*) Have you anything to add to the statement of Mr. Hemans?—As to the approaches at Waterloo Bridge, we do propose to take power to make those communications with Wellington Street and the Strand which are shown upon the parliamentary plan. Of course the construction of those approaches is a mere question of expense. The thing is easily done, and if not done when the other work was going on it would involve an additional outlay.

The witness withdrew.

Mr. Francis Webb Sheilds, C.E., examined.

Mr. F. W. Sheilds, C.E.

100. (*Chairman.*) Is that your plan on the wall?—Yes.

101. Will you describe it to the Commission?—The principle of the plan is this:—To construct a river wall a little beyond low water line with a solid embankment within it:—to do away with all road arches and docks, and to fill the embankment in at an average height of about four feet above Trinity high-water mark, to make no further constructions of any kind, and to carry the roadway upon the centre of the embankment, leaving a space for wharfage between the road and the river. This mode of doing it occurred to me, because I thought that the effect of making docks in the manner which has been generally proposed would be to create extreme difficulty in carrying on the wharfage traffic, and to cause such additional expense to the wharfingers as would probably in a great measure destroy the profits of their trade, and render it necessary to compensate them as fully as if their wharves were taken altogether. The dock plan involved, I considered, an expense of from 400,000*l.* to 500,000*l.*, in addition to the simple embankment, because it required the construction of the docks themselves, the construction of lock gates, and the construction of a series of high arches to carry the road over those lock gates, in order to allow the barges to pass under; whereas by making a simple embankment and putting the wharves next the river, which is their natural place, all these heavy and costly works are swept away at once, and you simplify the matter to an extreme degree, entirely doing away with the high constructions on the river, which, varying in gradients and levels as they do, would, I think, be unsightly things, and would be extremely objectionable especially in the parts of the river shore which are devoted to ornamental purposes, such as the Temple Gardens. It occured to me as a matter of economy that you might carry a road through the centre of the embankment, leaving a considerable space between the road and the water's edge, which space you would give up to the wharfingers in case you did not like to go to the expense

of making it into ornamental ground. You might give this space in front of their wharves up to the wharfingers as a compensation, partially or wholly, for depriving them of their present water frontage. In this way they could approach their wharves without the trouble of going through dock entrances at right angles to the stream, which I believe they could only do at high water. Also I think that a road along the level of the embankment would be more advantageous to the public, as, instead of rising and falling, they would get a road of a uniform level throughout. It is with those general views that I have prepared this design, which is described in detail in my report submitted with the plan.

102. (*Mr. Hunt.*) What is your estimate?—250,000*l.* for the construction of the works, independently of compensation.

103. (*Chairman.*) You have left out compensation altogether, from the belief that what you would give to the wharfingers in additional depth of ground would satisfy them for taking away their barge beds?—In some cases the new wharves would be more valuable than the old; in others less so, and the latter should be compensated; but in truth I am more of a practical engineer than a valuator. I do not enter upon the details of this question, because I hardly consider myself thoroughly competent to deal with it. I have no doubt, however, that, considering the unimportant character of a great portion of this wharfage, and the great value of the reclaimed space with frontages to the river and to both sides of a leading thoroughfare, the value of the additional land reclaimed would go a long way to meet the question of compensation.

104. Have you communicated at all with the wharfingers as to your notion of giving them ground in front of their wharves?—I have, with several of them.

105. Do you find generally that they are in favour of the plan?—I have found great differences amongst them. Some have told me that it was a very satisfactory scheme in every way; others have objected that the sweep of the current round the embankment wall would be increased, and that the difficulty of the barges lying in the stronger current would be in a great degree a drawback to the use of the new water frontage. Still they generally told me that it would be easier to carry on the traffic in this manner than by passing through docks.

106. Passing through lock gates into docks?—Yes.

107. (*Sir Joshua Jebb.*) What would be the nature of this outer face of wharfage you propose to give them; would it be on the level of the road?—It would be a vertical face-wall; the top of the wall is proposed to be at the height of three feet above Trinity high-water mark, that being a greater height than the majority of the wharves are at present.

108. Some wharves would get covered over at high tide, would they not?—Three feet would keep them out of high tide. The centre of the road I propose to make four feet six inches above Trinity high-water mark.

109. How are the wharfingers to communicate with their places of business behind?—They would go across the road. Generally speaking, they would have a sufficient depth between the road and the water to carry on at least a very considerable amount of business. I contemplate that as a great part of their space is taken up in offices and stabling, those buildings would probably be across the road, and the river frontage would be occupied wholly in the storage and despatch of goods, the road offering them considerable facilities for sending their goods right or left directly.

110. That considerable facility would be a great diminution of the public convenience?—Undoubtedly it would be so; the way to meet that being to make a road of sufficient width, a considerably greater width than the ordinary streets, so as to accommodate both that traffic and the thoroughfare traffic.

111. What are the widths respectively of your road and the frontage which you propose to give to the wharfingers?—The road is 80 feet.

112. Including the footpaths?—Including the footpaths; it may be increased to 100 if thought advisable.

113. What is the width of the frontage?—It varies considerably; it varies from 60 feet to about 160 feet.

114. The river frontage and the road would run parallel?—They would not run quite parallel. The embankment varies in width considerably, and as a general rule the road is carried in the middle of the embankment.

115. (*Captain Galton.*) What induced you to take those particular lines for your line of wall?—I was confined to them in several places. I began at the abutment of Westminster Bridge; the next fixed point was the present north pier of Hungerford Suspension Bridge; then the first pier of Waterloo Bridge; and lastly, the supposed place of the first pier of the new Blackfriars Bridge.

116. At Waterloo Bridge you take in the first arch?—Yes. Nearly the whole navigation of the river at present passes through the second arch, and it would be a work of considerable difficulty and expense to carry the embankment out to the second pier.

117. From the extra depth of water?—Yes. I do not see any commensurate object to gain in going to this great expense.

118. You pass on to the first arch of Blackfriars Bridge?—The termination of the embankment has no reference to the present arches of Blackfriars Bridge. It is supposed that that will be replaced by a new bridge with larger arches, and the embankment is supposed to be carried to the first pier of the new bridge.

119. You terminate it abruptly at Blackfriars Bridge?—I terminate it there by curving it in to meet the present abutment.

120. Do you consider that there would be no ill effect from that upon those other wharves below?—No. I do not consider that there would be any ill effect from it; the current is considerable at those wharves; it is quicker than they want it now. The effect would be rather to shelter those wharves from the stream, and to check the current past them, than otherwise.

121. Do you propose to deepen the river in conjunction with your embankment?—What I propose is to take the material for the embankment from the bed of the river adjoining, dredging judiciously so as to improve the channel, and to restore, as far as possible, to the river in depth of water-way what is abstracted from it in width by the embankment, and so to make the channel more uniform.

122. You say that your estimate is 250,000*l.* exclusive of compensation. What does that apply to?—To the face-wall along the embankment, to the filling in of the ground of the embankment behind, to metalling the roads, to the construction of the approach to Waterloo Bridge, and to the construction of a low level sewer; with a sum of 20,000*l.* for contingencies.

123. But not all the approaches. You show several on your plan?—Yes; I include metalling of all those streets.

124. And the construction of all those?—Yes.

125. Have you carefully considered all the levels of those streets running down to the river?—I have.

126. For instance, Norfolk Street, Strand, you come down a steep incline?—It is too steep to make an incline. I propose to make stairs into Norfolk Street. Two or three streets would have to be communicated with by stairs, unless considerable expense were gone to in lowering the streets.

127. Involving interference with the property in the streets?—Involving interference with the property in the streets; but as a general rule the streets communicate without difficulty upon their present level.

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128. Of what material is your wall to be constructed?—Of two rows of cast-iron piling, 6 feet 4 inches apart transversely, composed of piles of 12 inches diameter and 1¼ inch thick placed 3 feet 6 inches apart longitudinally, united between by cast-iron sheet piling of the same thickness, and tied together on the top by strong tie-rods. This finishes at 9 inches above the level of low-water mark, and above that there is a strong brick wall.

129. That is filled with concrete?—Yes, for some depth down between the piles.

130. And a brick wall on the top?—Yes; I consider that for the upper portion of the structure cast-iron is not so suitable a material as brick in exposed situations liable to shocks from vessels striking it.

131. You show upon your plan a new street; is that a part of your plan?—That is what I assume would be constructed by the city.

132. What is the inclination of the approach to Waterloo Bridge?—1 in 32.

133. Do you destroy much existing property?—Very little.

134. Do you pass through the Duchy of Lancaster Office?—I cannot say. I do not know the house.

135. The first house facing the bridge?—Not the first house. I pass through one of the houses; about the third or fourth house.

136. Would not that be rather an inconvenient method of constructing that road, ascending, and then turning sharp round and going in the opposite direction?—I think not, as there is ample level space provided at the turnings. I consider that that approach is only required for the local traffic. The main body of the traffic which would pass along the new main road would not require to use Waterloo Bridge, and as it would not be advisable to carry the whole traffic up to the level of Wellington Street, and down again, in order to accommodate the small portion of it which would require to use Waterloo Bridge, the main thoroughfare is kept upon the level throughout, and passes under the bridge. The traffic from the northern districts of London over Waterloo Bridge would naturally use the Strand route.

137. The gradient, you said, was 1 in 32?—Yes.

138. That would be rather steep, would it not?—I think not. The heavy traffic from the Strand goes up inclinations much more than double that already.

139. Do you propose to fill up Whitefriars Dock?—I do.

143. What compensation do you give to the persons who own that dock?—That question would come afterwards.

141. At all events that would have to be compensated for?—It would.

142. The City Gas Company you deprive entirely of their wharf accommodation?—No; they would lose their present wharf front, but they would have an additional space of at least 80 feet by 300 in all given to them, and they would have a new river frontage equal to their present one or even greater, with the exception of the slight use they make of Whitefriars Dock.

143. And the separation of this wharf from their present property?—They would have to carry their coals across the road.

144. Do you propose to give to the Temple the land coloured green near the river, or is that for ornament?—I propose to give that to the Temple.

145. (*Captain Burstal.*) Have you, in the drawing up of this plan, had in view at all the proper régime of the river?—I have.

146. Do you estimate that there would be any great increase of current along the line of the embankment, particularly at Waterloo Bridge and Blackfriars Bridge?—I estimate that there would be an increase of current all along the embankment.

147. At all times of the tide?—At the time the tide runs the strongest the increase would be the greatest. About the times of high and low water it would be as still water as at present, but there would be a general increase of current, no doubt.

148. Have you heard any opinions expressed by people between the Temple and Blackfriars as to the effect this would have upon their wharfage business?—I have, by some of them.

149. What did they say?—Some of them said that whatever scheme was adopted they would require to be bought out; whether mine were adopted or any other; others said that they would prefer my plan to a dock plan. They thought that they would have great difficulty in taking the barges through; that they could not take the barges through dock entrances, except at high-water. The objection they made to my plan was, that the current would be increased, and that therefore they would have more difficulty in keeping their barges at their moorings; and from what I could learn the difficulty might be in a great measure met by using stronger mooring chains, and also, probably, stronger barges.

150. Do you think that there would be much difference in the current along the line of that embankment if the line were carried much further out?—I do. The current would be in a great measure in inverse proportion to the sectional area of the river, and as you diminish the sectional area you increase the current.

151. You think that if the sectional area were reduced much here (*pointing to the plan*) the rush of water would be strong there?—Yes.

152. Would that be the reason for reducing the width of your embankment at all, or do you consider it quite wide enough for your purpose?—I consider it quite wide enough for my purpose. I have endeavoured to avoid making it wider than necessary.

153. (*Mr. M'Clean.*) How do you communicate with Essex Street?—By stairs, as at present. The lower part of Essex Street on a level, a little above Trinity high water mark, would be continued on to meet the new main road.

154. (*Mr. Thwaites.*) How do you propose to construct your river wall?—By a double row of iron piling filled with concrete between to the level of nine inches above low water, with a brick wall above, as shown on the plan. I have gone on the principle that above low-water mark brickwork is superior to castiron forconstructions exposedto shocksfromvessels.

155. Where do you propose to put the sewer?—Along the main road, so that it may be accessible in case of accident.

156. Has your attention been called to the necessity of continuing the sewer beyond the point at which you terminate your embankment?—I have not gone minutely into that question, because the time which was fixed for depositing this plan hardly admitted of it; but I have noticed that the foreshore of the river is dry at low water as far as London Bridge, and it has occurred to me forcibly that the best way of carrying on the low-level sewer, would be to carry it along the foreshore of the river without the construction of an embankment.

157. With iron pipes?—No; but by a brick sewer put in by means of two rows of sheet piling, driven down, with the necessary width apart to admit of the construction of the sewer between them. Such means, even in porous soils, would keep the water sufficiently out when powerful pumps were used to dry the space between, to enable the workmen to construct the sewer. It is a mode of construction much used on the Thames, and quite applicable in this case.

158. Should you propose a brick sewer on the part to be embanked?—With sufficient depth to cover it overhead, I should.

159. Do you think that you would get sufficient depth, having regard to the level at which the road is, to protect it sufficiently from internal pressure?—I think there would be sufficient depth, but the sewer should be strongly constructed in cement.

The witness withdrew.

Report above referred to by the Witness.

Mr. F. W. Sheilds, C.E.

30 April 1861.

To the Commissioners of the Thames Embankment.

Gentlemen,

I have the honour to submit, for your consideration, the accompanying plan, sections, and estimate, for the construction of an embankment on the Middlesex shore of the Thames between the bridges of Westminster and Blackfriars; designed according to the general instructions issued by your Board, "to provide with the greatest efficiency and economy for the relief of the most crowded streets, to tend to the improvement of the condition and navigation of the river, and to afford an opportunity of making the low level sewer without disturbing Fleet Street and the Strand."

I propose to describe briefly the plan by which I think these public objects may be best attained, as shown on the large scale Ordnance Map, which is herewith submitted. The design has been prepared after making a careful and minute inspection of the locality, and after ascertaing the general levels of the ground with sufficient accuracy for the purpose.

The proposed embankment is formed by the construction of a face wall next the river, and by filling in the space enclosed between the wall and the present shore. The face-wall or river boundary commences, as shown on the plan at the abutment of new Westminster Bridge, is carried in a straight line to the end of Whitehall stairs; is then continued by a sweep of uniform curvature to the upper end of the Temple Gardens; and from thence proceeds in a straight direction to its termination at Blackfriars Bridge. Its position, as a general rule, is a little beyond the line of low water, and it touches in its course upon the inner faces of the first pier of the Hungerford Suspension Bridge, and of the first pier of Waterloo Bridge.

The space between the river wall and the present shore, as already stated, is completely filled up by the proposed embankment, so as to convert into reclaimed ground the entire foreshore of the river to low water line. Through the centre of this large reclaimed space, a road or thoroughfare of eighty feet in width is carried, but so as to leave generally a breadth of land intervening between the road and the river-wall, as well as between the road and the present shore. The top of the face-wall is finished at the level of three feet, and the crown of the roadway at the level of four feet six inches above Trinity, as the section exhibits.

The embankment is proposed to be terminated at Blackfriars Bridge. It is conceived to be less required below that point; also that its public objects can be sufficiently realised without incurring the immensely increased expense and diminished advantages which its further continuance would involve.

It is now proposed to state the reasons which have led me to the suggestion of this design. Three objects have been kept in view in its preparation, which may be thus described.

First. To secure effectually the public advantages which are the purpose of the work, namely,

1. The formation of an additional main thoroughfare:
2. The improvement of the river:
3. The advantageous construction of the low level sewer:

Second. The prevention of injury to the river side property, and to the business of the wharfingers.

Third. Economy of the cost of construction.

Firstly. The public advantages of the work.

1. The new main thoroughfare would run from Westminster to Blackfriars, and communicate in its course with all the following cross streets; viz., Bridge Street, Westminster, Whitehall Place (prolonged), Craven Street, Villiers Street, Buckingham Street, and George Street, Adelphi, Wellington Street (by an approach), Surrey Street, Norfolk Street (by stairs or by lowering the street), Arundel Street, Essex Street, (by stairs or by lowering the street,) and New Bridge Street, Blackfriars. From thence the main thoroughfare would be carried by New Earle Street (to be made by the Corporation), and by Cannon Street, to London Bridge and the eastern districts.

   The main thoroughfare along the river, except where approaching Westminster Bridge, is level throughout in its course. It passes under Hungerford and Waterloo Bridges, and has a clear headway of more than twenty feet under each.
2. The improvement of the river would be obtained by the enclosure of the entire foreshore to below low water line; effectually preventing the formation of mud banks, and maintaining the width and depth of the river at a more equable standard.
3. The low-level sewer would be carried along the line of the main road, for which work the construction of the embankment would afford every facility.

Secondly. Effect of the embankment upon the river-side properties, and upon the business of the wharfingers.

With regard to the properties, such as the Privy Gardens, the Temple Gardens, &c., (coloured green upon the plan), which would probably be left open and unbuilt on, there would be large additions to their extent; and as the road on the same level would cause no interruption to the river view, their value is presumed to be improved in proportion to the increase of their surface.

The prevention of injury to the wharfage traffic has been much considered in the preparation of this design. The arrangements with the wharfingers may vary in the several localities affected; thus, where the embankment is of considerable width, and the existing wharves not very valuable, (as between Hungerford and Waterloo Bridges,) it may be advisable to purchase the waterside property at an equitable valuation; and in return for this expenditure there would be obtained, on the completion of the embankment, a considerable extent of land on either side of the main road. That on the river side would possess both road and water frontage, and be suitable for wharves; that on the land side would be suited for business premises on a leading thoroughfare of the city. This land would be therefore very valuable, and the proceeds of its sale are thought equivalent to cover the costs of compensation which the carrying out of this design would involve.

Again, in the case of the more important wharves (as between Waterloo and Blackfriars Bridges), the reclaimed ground opposite their premises may be given to the wharfingers in compensation for the disturbance of their traffic. They would then be in a better position for landing goods than at present; with their wharves easily approachable at all times of the tide; with no demurrage of barges, and consequently with fewer required for their traffic; also with their premises abutting on a main thoroughfare, and with an addition to their space.

In fact, the whole of the new wharfage ground would possess these advantages, and its value would be further augmented by the face wall being suited to serve as a foundation for the fronts of new warehouses. From the opportunities I have hitherto had of communicating with wharfingers I conceive that these advantages would not be unappreciated by them, and that this design would meet with comparatively little opposition at their hands.

Thirdly. Economy of construction.

With a view to economy, which previous experience has proved so requisite in this undertaking, the works are designed of the simplest possible character. The embankment alone suffices for the required purposes; and the construction of docks,

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lock gates, road arches, &c. is carefully avoided. The result is shown by the moderate estimate for works which I am thus enabled to submit to you.

Further, it may be mentioned that the making of a public promenade along the margin of the river has been considered to form part of this question. For economy, this improvement is dispensed with in the present design; but it may be included to a great extent, if thought advisable, by forming the road next the river face-wall from Westminster Bridge to Somerset House, at the cost of sacrificing the proceeds of the new wharfage ground between Scotland Yard and Waterloo Bridge (coloured red upon the drawing). In this case an equal surface of reclaimed ground would be available for sale or compensation; but it would be on the land side of the road, and be less valuable in its character.

It now only remains to lay before you the cost of executing the works, which are designed of a substantial character, as shown by the detailed drawings on the plan. I may add that some reduction would result by the embankment material being partly supplied from the dredging operations of the Thames Conservancy; but no credit is taken for it in this estimate.

ESTIMATE FOR CONSTRUCTION OF WORKS.

		£	s.	d.	£
Embankment - -	Cube yards. 1,007,985	0	1	3	62,999
Brickwork of face-wall.	Rods. 2,024	13	0	0	26,312
Concrete ditto -	Cube yards. 5,484	0	6	6	1,782
Granite coping, ditto	Cube feet. 23,555	0	7	0	8,244
Iron in piling, ditto	Tons. 9,542	10	0	0	95,420
Cost of face wall and embankment -					- 194,757
Low-level sewer - - -					- 18,000
Approach to Waterloo Bridge -					- 7,000
Formation of new roads, &c., say -					- 10,243
Total cost of construction of works -					- 230,000
Contingencies, say - - -					- 20,000
					£250,000

Total estimate for construction of works, two hundred and fifty thousand pounds.

I have the honor to be,
Gentlemen,
Your obedient servant,
(Signed) FRANCIS W. SHEILDS, M.I.C.E.,
Civil Engineer.

47, Parliament Street, Westminster,
April 6, 1861.

Mr. H. W. Sich.

Mr. HENRY WYNDHAM SICH examined.

160. (*Chairman.*) Will you explain your plan to the Commissioners?—My plan can hardly be called more than a suggestion. I thought that a series of small docks, provided they were not too small, would be of greater use to the wharfingers than having one or two large ones; and I think they would be able to reach their barges better provided there were divisional walls between those docks, so as to enable them to reach their craft at all times. If they had one large dock they might have, very likely, a great many craft in the centre of the stream, which they could not reach at all; but by having walls on each side of the dock they would be able to draw waggons alongside the craft, and to unload at all times, and also barges could come up, and take their cargo from the warehouses while the gates were shut—they will be able to supply them by means of this road outside the embankment. The road would be on plate iron girders on brick piers 50 feet apart, and so arranged with respect to the entrances to the docks that there would be a clear way enabling them to get outside with their waggons. I also thought it would be a great advantage if the construction of this embankment could be carried on in sections; and I think that of the sewer, the wall, and the dock can all be carried on at the same time by means of the division walls, with a sheet piling outside, to enable the outer wall to be built. Each of these acts as a coffer dam as well as a means of transit afterwards; you completely impound each dock, and can carry the sewer to any depth requisite; and with respect to the present walls also, you can make any arrangements for underpinning with more certainty than if the work were built in larger pieces. Perhaps two feet above Trinity high-water mark is rather low for the wall, but I purposely make it as low as possible, so that the craft can be got at with greater ease. The highest tide was not above three feet above Trinity high-water mark, and I think there is little chance of it reaching that height often again. When the embankment approaches the present line of frontage so nearly as it does after Blackfriars Bridge, there would be a system of open docks, in which, if paved with hard material, and the river dredged in front; the mud would be able to pass by itself into the river, and would not probably silt them up at all. I propose to terminate the embankment at Southwark Bridge and to cross Queenhithe Dock. The sewer would pass across the top. The entrances to these docks are 22 feet wide. I have taken the size of the ordinary barges as not exceeding 20 feet in breadth. I think, allowing an extra two feet, by fender piles the craft would be able to get into the docks with tolerable facility. I propose also single gates. The sill of those gates would be laid not more than a foot above the present level. The present line of the shore is levelled where necessary, but not disturbed much, so as to enable barges to lie as they do now upon the gravel, if the wharfingers desire it.

161. You have no road at the level of the ground?—No, except for the wharfingers between the wharves.

162. Your road is lifted up on piers and arches?—On piers and plate iron girders.

163. (*Mr. M'Clean.*) Have you any section of this line of road?—No.

164. (*Chairman.*) You began this plan recently?—Very recently. I have not had two days to prepare the suggestion altogether.

165. Were you led to adopt this sort of arrangement from having read the instructions to the Royal Commission?—Principally.

166. The essential characteristic of your plan is this: You carry out a line of embankment to the first pier of Hungerford Bridge; you fill up the whole space between the embankment and the existing shore with docks, having party walls between them; and you give docks in many cases of 300 feet from the existing wharves towards the river, and varying from 150 to 80 feet in breadth?—Yes.

167. Each individual dock would have an opening of 22 feet wide with one pair of gates?—Yes.

168. That one pair of gates opening inwards at the flood tide, and then shutting, to keep the water in so as to keep the barges in the dock always afloat?—Yes.

169. Those walls or separations between the docks have been put in in order to facilitate the communication with the craft?—Yes.

170. There is no roadway at the level of your embankment, but the public would get along upon the road raised upon the piers and iron beams?—Yes.

171. What height above the level of Trinity high-water mark would the top of your road be?—It

would vary of course in different places. It would start from the level of Westminster Bridge, and then, in order to get headway underneath Hungerford Bridge, it must be sunk to a depth of 14 feet above Trinity high-water mark, allowing a headway of 11 feet.

172. You would fall 14 feet from Westminster Bridge to Hungerford Bridge?—Not so much.

173. Do you happen to know how it would affect Somerset House? Do you know what the level of your road would be in reference to Somerset House?—It would have to be raised above the present terrace of Somerset House, and it would be partly in front of the windows.

174. Intercepting the view of the windows of the lower story?—Yes; but they are all offices.

175. (*Captain Galton.*) At Hungerford Bridge at what height would the roadway be above Trinity high-water mark?—14 feet above Trinity high-water mark.

176. What would the thickness of the roadway be?—About five feet.

177. That would allow nine feet for the barges to pass through these dock entrances?—Yes.

178. You say you allow a headway of 11 feet under Hungerford Bridge?—Yes.

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179. What would be the height of the driver of a Hansom cab?—The top of an omnibus would be about eight feet, I should imagine; that is the roof.

180. Have you formed any idea of the expense of these numerous wharf walls that you would have to build?—I have not formed an estimate. I can furnish one.

181. (*Mr. M'Clean.*) How do you propose to construct the sewer?—Within each coffer dam formed by the roadways of the dock, and the outside wall.

182. (*Captain Burstal.*) The sewer would be in the middle of all the docks?—Within all the docks.

183. Do you think, from the inclination of the bottom of all these docks, there would be sufficient wash through the dock entrances to wash them and keep them clean?—I think so, if they were properly levelled.

184. If built upon a certain incline?—Yes.

185. You have no foreshore outside there?—It will be always in the water. There is a piece marked there to be dredged.

The witness withdrew.

Mr. Harry Robert Newton examined.

Mr. H. R. Newton.

186. (*Chairman.*) Will you explain the character and principle of your scheme?—The proposition in itself is I think a simple one; it is merely the question whether an open viaduct could be placed on both sides of the river in positions, so as to equalize the breadth of the river between Southwark Bridge and the Horse-ferry, Lambeth, and whether those viaducts could not be made also in a manner to be perfectly operative. This is a rough model (*producing the same*), which exhibits a viaduct in a certain form, and as far as proportion goes it is correct, except that two arches are here shown, whereas in all probability in practice there would be five. Assuming that such a causeway were constructed, and that the low level main sewer were carried through the centre of the causeway, by keeping the crown of the sewer construction six or seven feet or any other depth below high-water mark, the water on the bankside would not flow away beyond that point (*describing it by the model*), but the tide still continuing to recede would leave it at low water, this being the centre of the stream in that form (*describing it*), so that the water on the sides would be entirely held up, forming as it were canals. At the return tide the water rising would flow over the sewer, and at that period barges would be able to arrive at whatever arch they proposed to enter, in order to get to the wharves at exactly the same moment as they do at the present time. For the regular variation of high water special openings would be provided. That is the proposition. Then comes the question how far a dock of that kind would be useful. If this width (*pointing to the plan*) were preserved entirely throughout, the water would lie, as it were, in the half neck of a bottle, and when it arrived at the top of the sewer it would separate into the lagoons or canals on either side. The object I have in view is to leave everything as much as possible exactly as it is, and not to interfere with conveniences required for conducting trade, for I suppose it would be assumed that a constant canal like that would be a commercial development highly useful to the barge owners. On that score it seems reasonable to suppose that it would do away entirely, as far as they are concerned, with the question of compensation arising from detriment to their trade. There are two courses which this embankment might take from Westminster to Blackfriars. If the causeway sweeps through the second arch of Waterloo Bridge on the Middlesex side and the third arch on the Surrey side, there is a very large amount of shallow left on the Surrey side. Therefore, as far as this plan is concerned, this is merely attempting to show how the most graceful curve could be obtained; but if it were necessary to introduce considerations of economy, this curve on the Surrey side ought to be carried out through the centre of fourth arch, and on the Middlesex side through the centre of the first arch. The causeway would then pass, with the exception on the Surrey side between Westminster Bridge and Hungerford Bridge, entirely through shallow water or comparatively shallow water; but here (*pointing to the plan*) along this short distance there is an excessive depth of water; the depth there is 17 feet at low-water, being the greatest depth in the whole extent. The object also that I have had in view in suggesting a causeway like this is that it would facilitate the acquisition of sites for many Government operations, and afford many public conveniences which at present the Government have to provide for, and of course at very considerable expense. They are at present paying 30,000*l.* a year rentals for leaseholds in different parts of the metropolis, and not very far distant from Charing Cross, and it is probable that the expenses attending upon these premises are very considerable. If they could by some convenient means, without costly purchases of sites at Westminster, such as was proposed two or three years ago, find accommodation elsewhere, they could for an equivalent sum to what 30,000*l.* a year in rental would be, construct offices upon the embankment, including those portions of the causeway on which they may be selected to stand, and the annual cost would really in fact be not larger than what they at present expend; therefore probably they would have increased accommodation for the same expenditure. As an illustration of what would be likely to be saved for the Government, though it is not one which you may consider otherwise appropriate at the present moment, I may be, perhaps, allowed to explain, that the Law Courts Commission have reported upon the purchase of a site for which not less than 750,000*l.* is to be given. To this would have to be added about 180,000*l.* for building the basements, foundations, drains and roadways through out the site seven acres in size, also for the value of any portion of an embankment or roadway about to be carried out, and by which the Courts might otherwise have stood, so as to arrive at a total of 930,000*l.* of public money likely to be spent in this way, whereas a site for the Law Courts, putting aside the question of locality, would not on the embankment probably cost more than 230,000*l.*, making a difference of 700,000*l.* I adduce that as a strong illustration; because, assuming the Government would purchase land in Westminster and other places, that is a striking example of what would be the probable

Mr. H. R. Newton.

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expense to them now or at some future period if they found sites elsewhere, as compared with what would be the expense to them if the embankment scheme was carried out so as to be serviceable for those purposes. In that way I think I could show that such a large sum of money, amounting to between 3,000,000*l.* and 4,000,000*l.* practically exists, a sum that would be sufficient to carry out half the embankment scheme on both sides of the river and the buildings upon it, and keeping to the question of means, the remaining portion of this embankment which might not be required for Government or public purposes could be provided for by mortgaging or selling those various estates which the Government at present possess in the metropolis, which are of no value, except for the income produced, and for the reversion, and of no use either present or future, whereas a reversionary estate on the river would be from local considerations of the highest prospective value to the Government. I assume that it is reasonable to reckon upon those means, so that the embankment scheme can be entirely carried out, the more so, as it would probably have the effect of relieving the coal duties from contributing towards the embankment; and I think there is strong reason why, if possible, the coal duties should be relieved from being devoted to this purpose, because if they are absorbed for 10 years, for the sole construction of this embankment in any way, how the means are to be found for meeting the other public improvements it would be difficult to discover. As far as the roadway of the embankment is concerned, and the level of it, I take the mean between the surface of roadway of the highest bridge, namely, Waterloo and Trinity high-water mark; and the intention is that the communication should not be merely over the bridge, but under it also, because, the free bridges being so very few, (there being at the present moment only three between Westminster and the City,) there is a great excess of traffic crossing those bridges, and a double provision, going over the bridge and also going under the bridge, would obviously get over the difficulty which exists in such crossings as we see in the case of Farringdon Street and Fleet Street. Therefore, with regard to Waterloo Bridge, the proposition is to go up the incline on either side to get up to the roadway of bridge and down the declines on either side to pass under the bridge, the inclines and declines being the same gradient. At Westminster the height of the roadway is exactly the height of the bridge, and at Blackfriars it is the same; so that declines would only be introduced to pass under these two bridges. This is a small plan (*producing the same*), which indicates in red the parts which would probably be useful for the Government. That part tinted yellow would form the remaining half of the estate suitable for leasing for commercial purposes.

187. The distinguishing feature of your plan that you would have a row of buildings between the proposed roadway and the existing shore?—Yes, as far as possible.

188. On both sides of the river?—Yes.

189. For instance, between Somerset House and the river you would have a row of lofty buildings?—Not a row, but in the manner shown in that drawing; the Government in that way could enlarge Somerset House.

190. You would carry the front of Somerset House about 150 feet further into the river?—Merely wings.

191. In that way you propose to make what you call an estate?—Yes.

192. You would lay the foundations in the river, upon which you would raise buildings all the way along?—Yes; where obviously not objectionable. This drawing is merely to show the principle of the viaduct the whole way. I consider that an open viaduct of itself affords the best opportunity for afterwards developing different requirements. As regards streets, it is obvious if this causeway were built, leaving apertures or arched thoroughfares under the houses, the making of streets from the shore would probably be by far the more remunerative part of the plan; but this and many other points do not necessarily come into the primary consideration of the question, because they could be dealt with at any moment. For instance, in the same way might the question hereafter be considered with regard to the water. Supposing at some future period it might be considered advisable for the metropolis that this should be fresh river water instead of tidal water, that could be arranged. In that case locks would be necessary, so as to prevent the water of the centre from coming into the water of the side, and then would come the consideration how many of these thousand arches would have to be blocked out, for at present it is a question of a thousand arches and a thousand entrances to different properties on the river, of course varying at certain points for special reasons.

193. (*Chairman.*) I will read to you a paragraph of our instructions, from which you will see that this very elaborate and beautiful scheme of yours, full of merit as it is, will hardly come within them. We are to examine plans, and to state which of them will, in our opinion, "provide with the greatest "efficiency and economy for the relief of the most "crowded streets, by the establishment of a new and "spacious thoroughfare, for the improvement of the "navigation of the river, and which will afford an "opportunity of making a low level sewer without "disturbing the Strand?"—I am not aware, my Lord, that my proposition very far exceeds, if at all, those instructions, or that the cost would be greater than those various propositions which have been probably brought to your notice, but of course after such an expression of opinion from you I cannot seek to occupy your time further. You apprehend rightly that these plans have indeed been designed some years, and consequently without reference to the instructions to this Commission, they were laid before the Government last August. I am inclined to think that if the ultimate saving were taken into account, in respect of sites for Government buildings, it would be considered to establish that economy upon which you lay so much stress.

194. (*Mr. Hunt.*) Have you formed any estimate of what it would cost?—Yes.

195. What would be the estimated cost of carrying out your plan on the Middlesex side?—With submission, I do not think I should be asked to give a reply to this question after the intimation from his Lordship that my examination is to be discontinued, as the propositions do not come within the scope of the Commission.

The witness withdrew.

Mr. A. M. Rendel.

Mr. Alexander Meadows Rendel examined.

196. (*Chairman.*) Will you explain your plan to the Commissioners?—I cannot explain it in fewer words than by the description I sent in.

"This design differs from others of the same class chiefly in three points; first, in the communications provided between the docks and the river; second, in the construction of the river wall; and, third, in the construction and route of the low level sewer. There are many other points of difference, but generally they arise out of the above. As regards the first of them, it will be seen that two basins are provided, the one between Hungerford and Waterloo bridges, the other between Somerset House and Temple Gardens, having each an entrance from the river 240 feet wide, and both being deep enough to allow the largest billy boys to enter or

leave them at any time of tide, even dead low water on Trinity datum. The roadway formed along the embankment is carried over these entrances by girder bridges, each in one clear span of 240 feet, and having a minimum headway beneath them for the ngress and egress of barges of twelve feet at Trinity high water, of 21 feet at half-tide, and of 30 feet at Trinity low water. On each side of each basin it is proposed to construct a lock 150 feet long by 30 feet wide, leading into the three docks into which the basins divide the area enclosed by the embankment above Blackfriars Bridge. It is proposed that these docks should have a depth of 12 to 13 feet at Trinity high water. This depth is selected as affording a minimum of 8 to 9 feet at high water neap tides, which is sufficient to float the largest billy boys, and because it will allow of the low level sewer being carried under the bottom of the docks and basins. Opposite Whitehall Gardens and the Temple it is proposed to fill in a portion of the enclosed area in the manner shown, leaving only a canal of 60 feet in width between the enclosures and the outer embankment, for the passage of barges between the locks and the wharves beyond the gardens. The enclosures so formed, in all three acres, may be handed over to the owners of the houses in Whitehall Place and to the Temple, as compensation for the injury inflicted upon them by the embankment. A similar enclosure might, if desired, be made opposite Somerset House. The embankment runs from Westminster Bridge to about midway between Blackfriars and Southwark bridges, a total length of 7740 feet = 1·466 miles. Its total clear width up to the east end of Temple Gardens is 100 feet; thence to Blackfriars Bridge 90 feet. These widths afford an ample roadway with a towing path on the inside. Commencing at Westminster Bridge, the roadway falls at 1 in 50 down to the level of 6 feet above Trinity high water, which level it maintains until it has passed under Hungerford Bridge, when it again rises at 1 in 50 to 15 feet above Trinity high water, to obtain headway for the barges under the girder bridge which carries the road over the entrance basin. It again falls at 1 in 50 to 6 feet above Trinity high water, to obtain headway for carriages under Waterloo Bridge, and again rises and falls similarly to obtain headway for the Temple entrance basin. The road finally rises at 1 in 50 up to the level of Chatham Place, or 15 feet above Trinity high water. The embankment, but not the road, is continued under Blackfriars Bridge at the level of 6 feet above Trinity high water for a length of 1,000 feet. Its width here is 30 feet, and it encloses another dock, access to which is obtained by means of a lock, 150 feet long by 30 feet wide at its eastern extremity. Should the reconstruction of Blackfriars Bridge be determined on" (*this was written before the reconstruction of Blackfriars Bridge was determined on*), "it might be better to let the roadway pass under the bridge at the level of 4 feet above Trinity high water, and also under the railway bridge, and then bend round to the proposed new Earl Street. In this way cross traffic at the junction of Blackfriars Bridge and the embankment would be avoided, without much further expenditure in the purchase of property than must be incurred for the construction of the railway bridge. The second main point of difference is that the outer or river wall of the embankment is constructed below low water of large blocks of brickwork, weighing from 20 to 30 tons, built dry on land with the best hydraulic mortar, and afterwards brought up to the place where they are required, and set from an overhead stage by means of divers. They might be bedded in mortar, but laid with dry joints. This is the manner, except that stone was used instead of brickwork, in which the heads of the Portland Breakwater were constructed by the late Mr. Rendel, and since his death by Mr. Coode, with the most perfect success. It is also the manner in which the late Mr. Rendel proposed to construct the harbour of refuge at Dover. Above low-water mark the wall will be built in the ordinary manner. The necessity of a coffer dam is thus avoided, without having resort to so expensive a plan and one of such doubtful expediency as iron sheet piling. It is proposed to found this wall at 33 feet below Trinity high water on the average. In the hollow at Hungerford, a less depth would be sufficient; in the neighbourhood of the Temple a rather greater depth might be desirable. The necessity for so doing will be made apparent by an examination of the sections of the river taken by Mr. Page and Captain Burstal. The outer side walls of the entrance basins would in part have to be constructed like the river wall. All the other walls and works could be most cheaply and readily constructed of concrete, faced with Kentish rag. The late Mr. Rendel and his son, the author of the present design, have constructed some thousands of feet lineal of dock walling in this manner at the London and West India Docks. Coffer dams would only be used to enclose the entrances to the locks, not the basin during construction. Four communications are provided with the Strand, namely, at Buckingham, Cecil, Norfolk, and Essex streets. Buckingham Street will require entire re-construction, but it lies so close to the new Hungerford Station that the cost of so doing would be much diminished by the increased value given to the property, as the new street might be made to form the eastern boundary of the station. The other streets would require but little alteration. These four communications would be carried over the new wharves formed by the sides of the basins on arches (which, with the wharves, might be let,) and over the locks by girder bridges, affording the same headway as the main girders over the entrances to the basins. All these girders would be of wrought iron. A design for the larger girders is submitted herewith. The third main point of difference is that the sewer is not carried along the line of embankment, but under the docks and basins in such a course as their depths and irregularities require. But their depths are too great to allow of the sewer being constructed of brickwork in the usual manner, without alteration of the levels already determined on. Therefore it is proposed to construct the sewer of a cast-iron pipe, lined internally, if thought necessary, with three inches of Staffordshire bricks, or with tiles in cement. The ends of the pipes would be bored and turned so as to fit in closely together. They might thus be easily fixed even in water. The advantage of so constructing the sewer is that it is not carried under the sills of the entrances to the docks. If it were carried under the entrances the levels at which it must be constructed would necessarily limit the time of access to the docks or egress from them to three or four hours at and about high water. The space enclosed by the embankment may of course be laid out in a very different manner to that above described. The object of its author has been to show as little interference as possible with existing interests. The cost of the works of the whole design is estimated not to exceed 650,000*l*. The prices which have been adopted in preparing this estimate, except that of setting the brickwork below low water, which has been determined from experience at Portland, have been submitted to and approved by the firm of of Messrs. Wm. Cubitt and Co., the well-known builders of Gray's Inn Road, and 15 per cent. has been added to the total for contingencies, engineering, &c. As regards the line selected for the embankment, it will be found to be somewhat within other lines. It is the opinion of the author that, looking at this part of the river, both as a reservoir for the scour of the pool and as a highway, the encroachment on it should not exceed that which the actual requirements of the road and wharves demand. This is also desirable for the sake of Waterloo Bridge, which would be endangered by any great increase of scour, and for the safety of the embankment itself. The author is also of opinion that any embankment on

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the south side of the river should be confined to the construction of an uniform wall as close to the present line of wharves as may be. The loss of water space thus incurred will then, in his opinion, not be greater than can be compensated for by the increased momentum of the tide above Westminster Bridge."

197. Does your line go much beyond what is called Mr. Walker's line?—My north line projects into the river about 75 feet beyond Mr. Walker's line at Blackfriars Bridge; it is identical with if not within his line at Waterloo Bridge, and about 50 feet beyond it at Hungerford, mine being 50 feet north of the north pier of Hungerford Bridge. Mr. Walker cuts off the southern arch of Blackfriars, Waterloo, and Hungerford bridges, whilst I propose to keep close in-shore. The result is that the width of the river on my lines will be only about 13 feet less (that is to say, the difference in the span of the first and second arches,) than on Mr. Walker's at Blackfriars, whilst at all other points it is much greater. I may, however, remark, that it is quite possible to throw back my line at Hungerford for about 30 or 40 feet, and at Blackfriars for 10 or 12 feet, though, so far as the river is concerned, I see no necessity for doing so. At Waterloo it is fixed by the headway necessary for carriage traffic. My line does not differ materially from any of the lines, except that it goes to within 50 feet of the pier of Hungerford Bridge, and takes in all but 30 feet of the second arch of Waterloo Bridge.

198. Do you know what the height of your wall would be at its deepest part from the foundations to the top of the river wall?—At the highest part 48 feet. My foundation is 33 feet below Trinity high-water mark. The present maximum depth of the river is about 30 feet.

199. (*Chairman.*) You propose to lay the foundation of that wall in deep water by means of blocks of brick work, to be set there by divers?—Yes; that is not at all a novelty.

200. Under your plan you do not contemplate getting any money back?—Only a very small amount.

201. Therefore we may consider your estimate as the cost of providing for the road way and sewer?—Yes.

202. (*Sir Joshua Jebb.*) Does it include the construction of the sewer?—Yes.

203. (*Captain Burstal.*) You would anticipate an increased stream there (*pointing to the plan*)?—I should say that the stream would run close to the embankment.

204. You think it desirable to follow the line of the stream as nearly as possible?—Yes.

205. (*Captain Galton.*) The basin entrances are for the purpose of affording facilities for getting into the docks?—Yes; a barge must have considerable space to manœuvre about in.

206. You mean if it were not for these entrance basins they could only get in at certain times of the tide?—They could not get in without difficulty at any time. The object is to allow them to get in at all times of the tide.

207. (*Chairman.*) You are clearly of opinion that an opening into a dock 22 feet wide would be altogether an impracticable construction?—Bargemen would complain of it, and it would be a very great inconvenience.

208. (*Captain Galton.*) Have you considered whether the docks would be likely to get filled with mud?—I do not think they would rapidly; the change of water in them would be that due to the variation between springs and neaps, we may say possibly it would be six or eight inches a day, and you would only have that amount of mud brought in per day which would be due to that six or eight inches. You might lay the docks dry, and clean the mud out. I should not apprehend that there would be more than one or two feet of mud a year accumulate in those docks. A great portion could be got rid of at scarcely any expense by occasionally disturbing the water by the paddles of a steamer, and then running down the dock for a few feet. The collection of mud to some, though not a great extent, is, however, an evil which must be calculated on in any plan, and I believe that mine will compare favourably with any other in this respect.

209. The expense of that cleaning out must be borne by some one, of course?—Yes.

210. Either the Government or the Metropolitan Board?—Somebody.

211. (*Sir Joshua Jebb.*) Would the barges be able to go into the docks from the basins at all times of the tide?—They would be able to go in at all times of the tide, because at dead low water there would be 9 feet of water at the entrance of these basins, and there would be 6 feet of water on the sill of the dock, or there might be more, if necessary.

212. (*Captain Burstal.*) You go into your docks by locks?—Yes.

213. (*Sir Joshua Jebb.*) The barges could go in side on?—The entrances are wide enough to let them go in as they chose; half a dozen might go in at a time.

214. (*Mr. M'Clean.*) Does your estimate include compensation?—No it does not.

215. (*Mr. Hunt.*) You think the wharves will not be damaged?—Probably there would be first-class warehouses springing up along the whole line of the present wharves, and taking their place.

216. Would not this system of yours be rather expensive to construct?—You could not construct a wall more cheaply.

217. I mean the construction of the basin and docks and so on, so as to accommodate the existing trade?—Yes.

218. Do you think that that mode, whether expensive or not, is necessary, regard being had to the character of the trades that now exist there? Are the wharves of sufficient importance to justify such an expenditure as that in order to give them accommodation?—I do not know what the wharfingers would demand as compensation, if you destroyed their trade. I think you would find it expensive to buy up all the wharves. I consider it a matter of absolute necessity, both for the convenience of London and to avoid great expenditure in compensation, that the wharves should be maintained.

219. Have you seen one of the plans where the wharves are brought outside?—You could not work such wharves with the barges lying in the tide-way, and with the washings of the steamers.

220. Does your plan come out as far as Sir Charles Barry's?—I cannot speak to that. I think all the lines agree pretty much. I am within the lines of the plans proposed to the Committee of the House of Commons last year.

221. (*Chairman.*) You take the second arch of Blackfriars?—Yes.

222. (*Captain Burstal.*) And $1\frac{3}{4}$ of Waterloo?—Yes.

223. (*Sir Joshua Jebb.*) Do you contemplate dredging the river, so as to increase the tidal area?—I think the river would dredge itself with the increased velocity.

The witness withdrew.

8, George Street, Westminster.
1st May 1861.

SIR,

A QUESTION was put to me yesterday by the Chairman of the Commission, as to the position of the line which I proposed to adopt for the Northern Embankment, with reference to Mr. Walker's lines.

I was unable to answer it properly at the moment, but I now find, by reference to the small plan of Mr. Walker's lines, published by Lord Lincoln's Commission in 1844, that my north line projects into the river about 75 feet beyond his line at Blackfriars Bridge; that it is identical with, if not within

his line at Waterloo Bridge, and about 50 feet beyond it at Hungerford, mine being, I find by reference to the large plan of my lines which I have at this office, 50 feet north of the north pier of Hungerford Bridge.

But by reference to Mr. Walker's southern line you will observe that he cuts off the southern arch of Blackfriars, Waterloo, and Hungerford bridges, whilst I propose to keep close in shore (vide my paper read yesterday, and sketch of new Blackfriars Bridge). The result is that the width of the river on my lines will be only about 13 feet less (that is to say, the difference in the span of the 1st and 2d arches,) than on Mr. Walker's at Blackfriars, whilst at all other points it is much greater.

I may however remark, that it is quite possible to throw back my line at Hungerford for about 30 or 40 feet, and at Blackfriars for 10 or 12 feet, though, so far as the river is concerned, I see no necessity for doing so.

At Waterloo it is fixed by the headway necessary for carriage traffic.

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With regard to another question put to me by a Commissioner, as to the collection of mud in the docks, I should have added to my answer, that a great portion could be got rid of at scarcely any expense, by occasionally disturbing the water by the paddles of a steamer, and then rnnning down the dock for a few feet. The collection of mud to some though not a great extent, is, however, an evil which must be calculated on in any plan, and I believe that mine will compare favourably with any other in this respect.

I am, &c.

H. Kingscote, Esq., A. M. Rendel.
Thames Embankment Commission,
2, Victoria Street.

Adjourned to to-morrow, at 12 o'clock.

Wednesday, 1st May 1861.

PRESENT :

The Right Hon. The Lord Mayor.
Major Gen. Sir Joshua Jebb, K.C.B.
John Thwaites, Esq.
Captain D. Galton, R.E.
Captain Burstal, R.N.
Henry Arthur Hunt, Esq.
John Robinson M'Clean, Esq.

The Right Hon. The Lord Mayor in the Chair.

Mr. William Alexander Brooks examined.

Mr. W. A. Brooks.

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224. (*Chairman.*) Will you explain your scheme to the Commissioners ?—I have been favoured with an opportunity of looking at the description of several plans which will assist me in my observations. There are three plans which I have proposed ; one of them being a design for embanking both sides of the Thames in its passage through the metropolis, where necessary and practicable ; the total cost being 441,962*l.*, and the aggregate length of the six quays being 26,340 feet. The quays are of granite and founded upon piling, at the level of low water spring tides. I have executed extensive quays of a similar nature, but built of freestone, in the Tyne and other rivers. The estimate upon which this is founded is, generally, at the rate of 15*l.* a running foot, and when I state that I have built similar quays on piles driven 20 feet below the level of low water, and that those quays only cost me about 5*l.* a running foot, when I say that I estimate this at 15*l.* a running foot, I think it will remove any doubt as to the estimate ; particularly as I have built those extensive quays on the Tyne, where I have been engineer for sixteen years. They are very extensive quays, many hundred feet in extent.

225. (*Capt. Galton*) Is the embankment you propose a solid embankment, or are there docks behind it ?—There are no docks behind it ; it is a solid embankment. I am now speaking of the first plan, which I will hand to the Commissioners (*handing in the same*).

226. (*Chairman.*) That plan supposes an embankment on both sides of the Thames ?—Yes.

227. The 26,000 feet includes the whole of the six quays ?—Yes.

228. That is to say, the embankment on the south and north sides of the river taken together give a line of about five miles, or something of that sort ?—Yes. There are two quays, one opposite St. Katherine's and the London Docks and Bermondsey, and another at Rotherhithe, with a view of effecting important improvements in the navigation of the river, particularly as regards the entrances to the great docks.

229. Are those two quays included in the length you gave us ?—They are ; so that the entire embankment of the Thames with quays is not that extraordinarily expensive work which the public seem to imagine.

230. (*Capt. Galton.*) Does your estimate provide for compensation or for buying up the existing wharves ?—No. I do not know that any estimate has been given, or is capable of being given, that would fairly give a correct estimate of what the cost would be likely to be.

231. (*Chairman.*) You have brought out your line of embankment considerably from the north side of the river. Have you been actuated by any reference to Mr. Walker's line ?—That is a line that might be executed provided that extensive river works were executed at the same time ; but I do not recommend that line to be executed if the work is merely to be undertaken by itself.

232. Does that line come further into the river than Mr. Walker's line ?—I believe it does.

233. (*Capt. Galton.*) Have you laid down this line after having gone into the question of the quantity of tidal water and the sectional area of the river? —I did go into that question, but since I made the original plan I have derived great benefit from Captain Burstal's plan, particularly from his tidal observations. When I drew that plan originally I had certainly strongly impressed upon my mind (and perhaps other engineers have had the same impression) the possibility of depressing the low water surface of the river ; but when I look at the tidal sections taken by Captain Burstal I find it is not practicable to reduce the level much below Westminster Bridge downwards, the only reduction it is possible to make would be in the upper portion of the river, at Putney and upwards ; therefore one main objection ceases.

234. (*Chairman*). If I understand you rightly you now withdraw that plan ?—Yes.

235. Will you describe the plan you propose ?—If it were executed without the Thames Conservancy at the same time dredging the river to a very enormous extent there would be a tremendous washing out of the bed close to the quay, and it would possibly have the effect of causing floods to accumulate and to do considerable damage.

236. (*Sir Joshua Jebb*). Do you think that the increased velocity of the current would dredge the

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1 May 1861.

river itself?—Yes; but the mischief would be that that increased velocity would take place almost altogether on the concave shore. It would relieve the banks on the south side, but there would be a great washing out even upon the plan I now submit. There would be a great deepening of the channel.

237. (*Capt. Galton*). Unless dredging goes on simultaneously?—Yes.

238. (*Capt. Burstal*). Do you think there would be any sensible alteration in the face or direction of the current on the Surrey side opposite Somerset House, if the embankment were constructed according to your plans 1 or 3?—No; I think the deep water must be along that concave shore, if properly laid out.

239. You think under any circumstances the set of the stream would be on the concave side?—I am quite sure of it.

240. Do you think that the removal of any of that material, the gravel and sand of which the bank is composed above Waterloo Bridge and below Waterloo Bridge, would in any way tend to divert the stream and set the stream more towards the middle arches of Waterloo Bridge?—Yes; certainly it would have that effect; but the weight of water would be about a third from the quay. There would be the deepest water, and you may expect that a change would take place in the set of the current in the western division of the river—that is, in the neighbourhood of Westminster Bridge—when that bank is removed, which now lies adjoining the west end of the Houses of Parliament.

241. You think that by the removal of that spit the stream would be diverted and would set more towards the middle of Westminster Bridge than now?—Yes.

242. And consequently the whole body of the stream would set towards the middle of the river?—Yes; now it has an unnatural set towards the southern part of Westminster Bridge.

243. One of your works upon the Tyne was Jarrow Quay, was it not?—Yes; that was one of the greatest works; what was called Hay Hole Dock, where there was an embankment extending into the river for a considerable extent, embracing about seventy acres, which were taken out of the river in a similar way to that which I propose here.

244. Did that embankment go into the main body of the river?—Yes; the entire work is made upon a deep sand about 50 feet deep.

245. I mean the main body of the river which before the embankment was made was the navigable channel?—Yes; it intersects the navigable channel and goes clean through it.

246. (*Mr. Hunt.*) What was the height of your wharves from the foundation to the top?—About 18 feet from low water mark spring tides. That was an embankment made watertight by a coffer dam six feet wide.

247. (*Capt. Burstal.*) The quay at Jarrow Slake is near the entrance of the river?—It is about a mile and a half from it.

248. The making of an embankment so near the entrance you would not probably consider of so much importance as banking the tidal water out 20 miles further up the river?—That involves the question which I am writing a paper upon. I have my own views upon it.

249. (*Chairman.*) Narrowing the outlet of the river close to the sea would not have any effect upon the quantity of tide water?—No.

250. The same quantity would come up?—Yes.

251. If you do not recommend your second plan, you had better pass to your third plan?—The third plan now submitted is for a grand quay between Westminster Bridge and Queenhithe Dock, involving an expenditure of 146,760*l.*; nearly the same piling would be required, and the top work would be the same.

252. (*Capt. Galton.*) On both sides of the river?—No, it would be a simple quay. I would bring forward a contractor who would be glad to execute it for 146,760*l.*; this is not nearly identical with Mr. Walker's plan. I do not like Mr. Walker's plan. I do not think it a scientific plan; the western part of it is not in accordance with the line of quay above. From my inspection of the different plans, I think my own plan more resembles the plan proposed by Captain Vetch of the Admiralty. To enable this low level sewer to be constructed, all that is required is to make a granite quay involving an expense of 146,760*l.*, that is without the stairs, the number of which would have to be determined, and of course there would be an additional cost there. 155,000*l.* would make a quay with a series of magnificent landings as well. I have the particulars of the cost of the granite from parties connected with the Cheesewring granite quarries, and I am sure that the work could be done at the price.

253. (*Capt. Burstal.*) Between your No. 1 Plan and your No. 3 Plan there would be no difference of expense?—Very little; there is the same expense of foundation; in fact, the third plan would be more troublesome, because I would have to drive the piles through more gravel; they must go down to 21 feet below low-water mark, because there would be a scour even if the inner plan were adopted.

254. In one plan you merely provide a wall of a certain depth down to the bed of the river?—No, I must put myself right with respect to that; in both instances the masonry from the level of low water spring tides is founded upon a solid mass of piling in front, as close as sheet piling, with a back row of three feet, and another row of eight feet still further back, and the whole tied together and with a proper platform, that is how we build quays in the Tyne, and there we have heavy work upon them, so that there is no question as to durability. That involves an enormous saving.

255. (*Chairman.*) At what level would you saw off the head of your piles?—About the level of low water mark spring tides.

256. Do you lay a timber platform upon that?—Yes, that is what I have always done; in some cases we drive with a slight inclination towards the river. They began in the Tyne, before I was there, trying to get masonry down by the use of a coffer dam; they were dreadfully teazed with it, and the expense was more than three times what I executed the quays afterwards for.

257. Will you proceed to tell us, having now your piles in and your wharf wall built, what you do with the interior?—I look upon it as a navigation work; nobody could execute it without the Thames Conservancy; they ought to make the quay; they ought simultaneously to dredge the river and deposit the material they get out to make the quay at the back.

258. You are rather describing the operation of carrying out the works; what we want is a description of the thing when completed?—That is the only way in which it can be done; you must have the navigation improved by dredging, and the dredged material from the river must be put at the back, then you have a solid quay and the work is done; that is how it has been done in the Tyne.

259. At what level would the quay be above high-water mark?—From three to five feet above high-water mark.

260. Then there would be in front of all the existing wharves a broad terrace of gravel five feet above high-water mark?—Yes.

261. Would you have a roadway at that level? You probably have not contemplated a road at all?—Yes, I have a spacious road all the way. I do not propose that the land should be taken up with speculative buildings.

262. You would have a roadway on part of the surface of the enclosed ground?—Certainly.

263. With accesses to the streets leading into the Strand and Fleet Street?—Yes.

264. Would the ground be given up to the wharfingers where it happened to come in front of

wharves?—In some cases they should have a portion of the ground given up to them by way of compensation, and they should have a right of way over the remainder to the river. The only difficulty is, with respect to the coal-wharves; the trade in those coal wharves offers at present a very great obstruction in going up the streets into the Strand. I thought that it would be desirable that we should remove those few wharves; with the trade of the other wharves we would not much interfere.

265. You would remove the coal trade from that part altogether?—Yes, to the westward; but if we we were obliged to keep it there, then I should propose that arrangements should be made to enable them to discharge their craft, and carry the coal without passing the entire of it over the top of the quay; there would be only a few places, and at those you would have lower quays established at the level of a foot above high water at neap-tides; that for the discharge of the craft would be very much more convenient than carrying up the entire body of the coal five feet above high water at spring tides.

266. The outer wharf would be seven feet below the inner wharf?—Yes, rather more than that. It would make a difference of ten feet to give sufficient headway. I call them subway or galleries.

267. (*Capt. Galton.*) They would be under water sometimes?—Yes, at high water spring tides certainly.

268. How would you unload the coals on to them?—When the tide falls. You will find that the great proportion of the discharge takes place when the tide has fallen; it would be much more convenient for them to discharge at that level.

269. Would you make a large bed for the barges to rest upon?—No; there is sure to be deep water in front of the quay, the coal would not have so far to be lifted up. In the Tyne, where the quays are only three feet above high-water spring tides, where they unload corn ships, they were obliged to cut steps of from five feet to six feet to enable the men to carry their cargoes more easily up.

270. (*Chairman.*) A coal barge arrives at high-water spring-tides; it might go right on that benching and remain there. If it came at any other time of the tide it might unload on to that benching?—It might.

271. You could not unload the coals and lay them on the platform, as it would be flooded when the tide got up?—I should unload them at once into the waggons.

272. Giving the waggons a communication under the roadway by a little tunnel?—Yes.

273. Then it comes to this, you would have a roadway sufficiently broad for the public traffic raised above the level of the wharves?—Above the level of this sub-wharf.

274. And of the existing wharves also?—Yes.

275. If the outer benching be so much below the level of the existing wharves I do not see how you are to get under the roadway?—I should leave a certain number of galleries.

276. They would be cross tunnels or cross openings?—Yes; twenty feet wide which would be quite enough for waggons to load, I have here a section showing it. (*Handing in a section.*)

277. (*Sir Joshua Jebb.*) What is the difference of level between the main road and this sub-way?—About ten or eleven feet.

278. (*Chairman.*) You would only have one river wall and one level, but in order to facilitate the loading and unloading you would have cross tunnels which would enable a barge to unload at the mouth of the tunnel at low water?—Exactly, or at any time of the tide after it had fallen below the level of high water neap tides.

279. By your section it appears to be ten feet from the level of the bottom of your gallery to the level of the top of the raised quay?—Between ten and eleven feet. From high water neap tides to high water spring tides, is six feet; and then from high water spring tides to the top would be, say, five feet, that is eleven feet; then taking off one foot above that would be ten, and one foot for the height of the iron archway would make it nine feet.

280. (*Sir Joshua Jebb*) It would be a headway of nine feet?—Yes; where those coal wharves come it is exceedingly easy to raise that two or three feet more if required where it would not interfere with the general design, because the general design is five feet; but if they wanted more than nine feet it is easy to give it on any particular portion of the quay. Giving slopes of one in thirty would do it.

281. (*Chairman.*) You think that there would be no objection to a long line of road undulating here and there?—No, not so slight as that. It is a mild difficulty in comparison with other plans, running up inclines to bridges of one in fifty, and so on. This plan shows a line of railway capable of being established if requisite. I do not bring that as part of my scheme, but if the railway be at all wanted, of which I have very great doubt myself, one may be very well established three feet above low water mark spring tides (passing under Waterloo and Blackfriars Bridges, by tunnels under the new quay or road), so far as between Westminster Bridge, and where it leaves the river on the east side of Blackfriars Bridge, involving an expenditure of 127,212*l.*, which would be self-supporting, and which would enable a low level sewer to be economically constructed and maintained, clear of obstruction.

282. A railway so constructed would have to be made water-tight?—It must.

283. Because at high water spring tides the level of the Thames would be about twenty feet above it?—Fifteen feet above it. There is no difficulty in making it water-tight. I propose the tide walls to be of concrete and the bottom also of concrete, eight feet in thickness. There is no doubt of their being perfectly water-tight; there is only a head of water of fifteen feet; there might be in floods two feet more, but then it is at a considerable distance from the face of the quay. This is quite away to the north, a distance of from 100 to 150 feet from the quay; and also it is suggested that the low-level sewer should be built in a mass of concrete forming the north bank of the railway.

284. The level of the rails being below the level of the water in the sewer, that is if the sewer happened to be full?—Yes, if the sewer happened to be full; but the sewer would be closed up, with an opportunity of getting readily at the sewer to cleanse it.

285. (*Capt. Burstal.*) You would have the sewer on the land side of the railway and the embankment of the river on the river side of the railway?—Yes, I have my own views upon this low-level sewer. I believe that it would be extremely liable to be choked up by heavy material, and I believe that the pumping power at the east end will not clear it away. They would be forced to go in as they do now, where a very much more rapid fall exists, to clear it out by manual labour. This would give a ready means of getting at the sewer to get out that material, because there may be certain places prepared beforehand to give convenient access to the sewer.

286. (*Mr. M'Clean.*) How do you propose to get the overflow from the sewer in the Thames?—There is sufficient headway for it to be caried across the railway.

287. The level of the overflow is about high water spring tides?—This would be above high water spring tide. There is no difficulty at all; this railway has this advantage, that it would enable a communication to be made by a tunnel with the different docks, and would also enable the railway to be carried westward—that is between Westminster Bridge and the new Houses of Parliament. The measure would be quite practicable. But I do not think that a railway would compete with the penny steamboats. I do not think that the railway would be self-supporting in competition with the penny boats. They would find not only great difficulties in keeping this low level

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sewer clear, but they would also find great difficulty in keeping open the main sewer.

288. (*Capt. Burstal.*) Have you considered the docks at all?—No. I did not think that there is occasion for docks, or that there is room for docks, and it would be a most injudicious site for docks in every respect; the tide would run so rapidly at the entrance of those docks that it would be quite impracticable to get barges into them, except by the plan which I saw yesterday by Mr. Rendel; that is by far the best plan, in fact the only practicable one.

The Witness withdrew.

Mr. Edward Batten Walmsley examined.

Mr. E.B. Walmsley.

289. (*Chairman.*) Will you describe your plan?—My plan and manuscripts are for an embankment detached from the main land, with a canal between the intercepting sewer, running along the margin of the present banks of the river, and the inner quay of the detached embankment. In studying that plan my idea was directed by economy and convenience; and I consider that in depriving the wharfingers of the river you are taking away their vitality, as it were, for the wharves will no longer be wharves if the ground is protruded into the river to the distance required in order to cover the mud banks down to the level of low water. The outside of my embankment takes the course of the present steam-boat piers, because there there is sufficient water, it is presumed, for vessels to come alongside in front of the quay of this embankment in order to land passengers or to discharge cargo; and through this lock, which is open to the sky, the billy-boys, or any vessels with tall masts or funnels, can come in at any time of the tide, the water being locked in the canal during the whole of the tide. That is Hungerford (*pointing to the plan*) where the tall craft generally come. At other parts, where required, there would be openings with flood gates for the entrance of the ordinary kind of barges under the permanent way, so that there would be no disturbance of the traffic. But in order to provide against any disturbance of the traffic during the entrance of the tall craft into the Hungerford part of the canal, I propose two swing bridges, one on each end of the lock, so that when the craft are coming in they may repose in the lock, and the traffic will be diverted over the other side; when they are in the lock, and there are a sufficient number to fill that lock, the bridge will swing back, and the traffic will go in its ordinary course. That lock could be made of any width; this is only to show the principle. My plan does not go into details, but merely shows the principle. The embankment I have shown here contains a tramway. I do not propose to recommend a railway, because I think myself, after mature consideration, to a locomotive railway there would be a very great objection. I propose a similar tramway to that laid down in Victoria Street, which would be quite enough for the ordinary purposes of traffic in competition with the steam-boats. Horse-cars would be quite enough going backwards and forwards that distance, and would be more convenient for the general public, because they could stop and take up passengers where required. Here is the carriage-way at the proposed width, which the scale shows, and there is the foot-path, and there are the public quays, back and front, each some eight or ten feet in width. On the outer quay are mooring posts for barges, so that a man may jump on shore and take a warp round them, in order to make whichever lock he may want to go through.

290. You propose to have a narrow embankment adjoining the existing shore, and in that narrow embankment you propose to put the new intercepting low-level sewer?—Yes.

291. Then you propose a canal, of what width?—It would vary. I suppose, on the average, it would be 100 feet wide.

292. At a distance from that you propose a solid embankment, upon the outer edge of which steam-boats could land passengers as they do now?—Yes.

293. And in order to carry on the business of the wharves you would have openings under the roadway to allow barges to pass in and to come into the canal?—Yes.

294. When they are in the canal they may come alongside?—They may come up and down where they like; and not only that, but I would give them a stream in counteraction to the tide. Having a flood-gate at the upper end of this sewer, when this canal was full at high water, the water could be running down to the sea. If this flush-gate be open here, which I propose to be 15 feet in diameter, the current, by the displacing of that water running down here, would have a tendency to go up. When the water comes into the sewer here at the upper end, there will be so much rush of water as the 15 feet diameter of this sewer will receive; that will cause a tendency in the current to come upwards, while the tide on the outer side is going down.

295. Do you mean that there would be a communication between your sewer and the canal?—Yes, at the upper end, by opening the flood gate about that level (pointing to section on plan), so that none of the feculance would come from the sewer into the canal; the canal water would rush down the sewer, and by that displacement would cause an upper current in the canal while the natural tide is running down.

296. What is to become of that water?—It would run down into the sea.

297. Would not that involve the necessity of making the sewers for a very considerable length of a much larger diameter than they are made?—I apprehend that they ought to be of a much larger diameter than I have seen them hitherto exhibited, because I have in view the ultimate continuation of this project, and that eventually, if the Act of Parliament is to be carried out in its integrity, the sewer must be taken up even as far as Teddington.

298. Bearing in mind that the Metropolitan Board of Works are at this moment constructing a sewer into which all this range is to run, how can the sewer which the Metropolitan Board of Works are constructing possibly carry off the immense body of water which you would let in a sufficient quantity of water to alter the current of your canal?—I have another way for carrying that water, viz., by opening, before flood, the flood-gate at the canal end below. Where this embankment comes there must be a very great contraction of the river, and if both sides of the Thames are contracted there would be a terrific rush, which would be very dangerous to lightermen; and if you do not get rid of some of the water that comes up, and put it into the broad expanse below, where the embankment ends, and keep up an adjustment or equilibrium of the rise and fall of the tide, there must be a rapid current in the outer stream; therefore this water running down to the sea, or wherever the outlet of this sewer or this canal is, will compensate for that which comes up, and keep the tide at its natural flow instead of having a rapid current.

299. (*Capt. Burstal.*) Suppose the sewer were enlarged, as you propose, even to twenty feet diameter, and that you had a constant supply from the canal to that sewer, do you think that that would have any sensible effect upon the stream of the Thames outside the embankment?—Yes; because the stream is excited by the lowness of the water at the other end, there being a large expanse of water, which is running away at a certain rate; this being a neck, a smaller aperture for it to come through, the water must rush at a rapid rate, in order to keep upon a level with the large space that is below.

300. The water having ebbed some distance vertically at the lower part of the river causes the stream

at the upper part of the river to run down ?—Yes ; that is my idea.

301. You think that a sewer of iron, or whatever it might be constructed of, twenty feet in diameter, taking in any quantity of water, would affect the stream outside ?—I mean that it would affect it. I do not say that it would cure it.

302. (*Chairman.*) Will you be good enough to apply yourself to a description of your work, supposing it to be finished. Am I right in supposing that these sections represent a carriage way raised ten or twelve feet above the level of that road ?—That is the Crystal Arcade, as I call it.

303. Would there be a carriage way in the Arcade ?—No, underneath; this is the superstructure. I do not confine myself to that. My plan might be without a superstructure or not. I consider that this is the paying part of it ; it would be one of the most attractive promenades and places of business in our metropolis if it were properly constructed and carried out. This would come on a level with the bridges. Parties could come into one of those arcades of fifty or sixty feet wide, similar to the Crystal Palace, there would be stairs to galleries, and altogether it would be very attractive and very paying indeed.

304. I think that that is going beyond our vocation, because we are instructed to report as to how the embankment can be done most efficiently, and with the greatest economy ?—The superstructure could be blotted out, because the other is my principle. There are the warehouses which I propose, more particularly at Hungerford. I propose that these warehouses should be built in the canal ; and these are the piers upon which the proposed warehouses are to be erected, with waterways underneath those warehouses so that barges could go under the warehouses and discharge their cargo into or receive cargoes from the several floors through trapdoors above, instead of carrying the coal and corn on men's shoulders across the barges, and along planks in mid-air, as they do now. Into those warehouses, by a bridge from Whitehall Place, or thereabout, waggons and carts could go to the first floor on a level with the street or main road, and place themselves immediately by the side of the trap doors, and receive the coal and different things from the barges through the trap doors in the water basement of the warehouse.

305. (*Mr. M'Clean.*) You do not propose to have any pumping from the low level sewer ?—No.

306. (*Captain Burstal.*) Do you propose to continue this principle below London Bridge ?—Not the embankment at present but ultimately ; the sewer to the outpour immediately.

307. You are under the impression that the Thames falls from Waterloo Bridge down to Barking ?—I apprehend that the bed of the river does.

308. Have you ever looked at the sections of the tidal flow ?—I only go by the natural rise and fall of the tide.

309. It is possible that you may be mistaken in that ?—I may be mistaken.

310. (*Mr. Hunt.*) Are you an engineer ?—No. I was born on a wharf, and nursed and bred on a wharf; I have been a holder of a wharf myself, and I have lived on the banks of the river for 20 years, as I do now ; I have been in the habit of going up and down the river pretty nearly all my life.

311. (*Capt. Burstal.*) Being under the impression that the river bed runs up-hill from the point of outfall at Barking Creek to Westminster, you think that a sewer built as you propose would go down that incline, assuming that it is an incline ?—Yes, unless there were an ascent afterwards ; then I would take it on a level across any dip.

312. The high water surface of the river is a dead level from Woolwich up to London ?—I was under the impression that it was an inclined plane whilst in action.

313. (*Chairman.*) Are you carrying on business anywhere on the bank of the river ?—Not now.

314. You were a wharfinger ?—Yes ; in Upper Thames Street.

315. From your experience as a wharfinger, you do not imagine that there would be any difficulty about docks, as you have shown a canal which one may call a continuation of a dock ?—I consider that there would be a great difficulty in having that bar across the entrance (*pointing to Mr. Fowler's model*).

316. (*Capt. Galton.*) It would be inconvenient to the wharves ?—It would be fatal—I should think. It is only those who may have docks who would be injured ; those which are not to have docks would be annihilated, I consider.

317. In what way ?—By carrying out their wharfage front 200 feet to low water mark.

318. By your plan you maintain the water opposite the wharves continually ?—Yes, high water continually. The barges would always float ; the barges would never ground, which injures them very much.

319. You consider that your plan would improve the wharf property ?—Certainly. I have got rid of all compensation ; if there were any compensation it ought to come from and not go to the wharfingers.

320. Do you consider that there would be no difficulty in getting through those lock-gates ?—There would be no other difficulty than that occasioned by opening the gate.

321. Would the wharfingers be willing to pay the expense of keeping people at the lock gates ?—I think that they ought to be compelled to pay some little wharfage ; I think that something is due from every one of the lightermen and wharfingers for having that accommodation.

322. (*Sir Joshua Jebb.*) During how many hours could they get into this canal by your plan ?—At all times down to dead low water ; I carry my embankment to the line of the steamboat piers.

323. You would have to dredge inside, probably?—No ; I think not ; we might have to dredge a little, perhaps.

324. (*Chairman.*) It is only here and there that you would have that sort of lock ?—I would propose one at London Bridge where I conjecture this for the present is to terminate; and at each end, perhaps, there might be one of those open locks ; one at Hungerford, certainly.

325. Supposing you wanted to get a barge to that part near Waterloo Bridge, must the barge go across to Hungerford Bridge to get there ?—This would be opposite Hungerford wharf.

326. Supposing that that was not its destination, but that it had to go further down or higher up ?—It would go down the canal ; there is plenty of width ; and there is no stream to impede it.

327. With respect to the convenience to the wharfingers, will it not be more inconvenient for the barges to have to go a considerable distance up the river to get into the canal, and then to have to go back again to get to the wharf to which they are going, than the existing state of things, which enables a barge to get to the wharf at once ?—I apprehend not, because I propose a series of flood-gates to take the ordinary barges ; that is, barges which do not load above their side, such as the coal and iron barges. It is only those which load above their sides, such as timber and straw, or those that carry masts or funnels, which I propose should go in at this one particular entrance. In fact, there are so few of those barges, compared with the general run of barges, that I presume it would be no objection, in the case of those few barges, to their being compelled to come in at one particular place, having the tide in their favour outside, and coming into this canal and going to their destination.

328. Take a coal barge or a barge with flour ; how would that get into the canal ?—At those different parts (*pointing to the plan*).

329. You would have locks at short distances from each other ?—At long distances.

330. To accommodate how many wharves ?—Perhaps 30 or 40 wharves.

331. Then if there happened to be barges going to half that number of wharves, there would be ten or fifteen barges wanting to go through the lock ?—They

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generally go in at high water; the gates would always be open at high water, when the tide comes up equal to the level of the water in the canal. I propose that the flood gates should be opened till high water, and therefore there would be free exit and entrance during, perhaps, an hour.

332. Supposing that there were three or four barges wanting to get in at the same time, they would have to wait the one for the other?—They would not wait five minutes. They would not mind waiting, when we consider that they have now to wait seven hours pretty well for the tide, which they have to do after discharging a cargo before they can get away from the berth; they lie dead on the ground or the mud, and cannot get away till the tide reaches them. But in this plan, if a barge comes up the lighterman can discharge his cargo, and make way independently of the tide, and need not wait at all.

333. Do you propose that in all these entrances they should be enabled to get in at all times of the tide?—That is a matter for consideration; it could be done.

334. That is not a necessary part of your scheme?—No; but they could come in at all times of the tide, because with this quantity in the canal it is the same as going in and out at Teddington lock; we can go in and out there when we like. Then it would be a great convenience to barges to enable them to go from one wharf to the other, because I know that barges frequently bring up from the docks and pool several wharfingers' goods at one time. The lighterman may have small parcels of different goods, and he may take in one barge goods for several wharves in the same neighbourhood. He may deliver his goods at one wharf; and directly he has done there, instead of being on the ground, and having to wait for the tide, as is the case now, he could move to other wharves, and deliver out his parcels till he has exhausted his cargo.

335. Your canal then would be always kept full?—Yes, or I could discharge any quantity through the sewer, or out of the canal at the lower end, in order to maintain the equilibrium, and down, have fresh water to a quantity which would keep the barges afloat.

336. (*Sir Joshua Jebb.*) Would the barges suffer any inconvenience from lying outside, owing to the greater velocity of the current?—It would be impossible for business to be carried on. Many wharves have five frequently, generally four or three barges, in tiers discharging every day. Therefore, supposing that the Thames were to be embanked on both sides, I conceive that there would be an approximation of the barges on each side. Supposing that there were two wharves in juxta-position to each other, and they required the same number of barges in tiers, they would almost fill up the channel. There would be ten barges, we will say, opposite one wharf; and I do not think that five barges could moor without the buoys, such as they have now. I think in taking a turn round a post on the quay they must have a warp like a man-of-war's hawser to hold them, when five barges are lashed to each other, with the immense leverage which the outer one would cause with the strong current running against them. My plan is to get rid of all the craft in the river, and to take them into these bays. In the course of the shore there are a vast number of bays. This is an enormous one at Hungerford; but there are other bays, where I conceive that the barges in a canal like this should be compelled to moor, instead of mooring in the highway as they do now, to the great inconvenience, and danger I may say, of the navigation. There would be ample room for them. For the diversion of the street traffic I refer to my manuscripts deposited with my plan.

The witness withdrew.

Mr. Thomas Edmund Weller examined.

Mr. T. E. Weller.

337. (*Chairman.*) You are a Civil Engineer, I believe?—Partially I am. I have been accustomed to engineering great part of my life. I am more of an amateur than a professional engineer, but I have been occupied as an engineer in connection with iron works.

338. Where are your works?—In Wales.

339. Will you give the Commissioners a description of the plan you propose?—I propose first to construct an embankment as near as may be in Mr. Walker's line, commencing in a line with the Houses of Parliament, and terminating near Queenhithe, taking in one arch of Waterloo Bridge, and taking in one arch of Blackfriars Bridge. I propose to leave behind the embankment water spaces for docks with openings at different places. Then I propose to erect a viaduct which will carry a railway commencing at Whitehall Place, and running it across the dock at Hungerford, going underneath Waterloo Bridge on the solid ground of the embankment, continuing on the same to Blackfriars Bridge, going under the first or second arch of Blackfriars Bridge, and arriving where the embankment terminates near Queenhithe; I then land upon the existing projecting quay, which seems to have been cribbed at some time from the river, having no substantial buildings upon it. I cross the entrance of Queenhithe, land again upon the existing quay, and then I turn behind Hamburg Wharf, go over Hamburg Yard, cross Thames-street and through back streets and terminate opposite St. Swithin's Lane; that is the viaduct for the railway.

340. All you have been describing has reference to the railway, not the road?—I am coming to the road presently; the railway will be underneath that. The roadway viaduct will commence in Whitehall Place, gradually rising up to get on to the top of the railway viaduct, and to pass on a level across Waterloo Bridge; the roadway will continue on the top of the other viaduct till it gets to Blackfriars Bridge, when it will diverge to the north-east and land at Chatham Place. Then if the new street into Cannon-street is carried out, there will be a road-way from Whitehall Place to Cannon-street.

341. That is the roadway for carriages?—Yes.

342. That would be at a higher level than the railway?—It would be at the top of it; it would be the upper part of a two-storied or a double viaduct, and would be on a level with the top of Waterloo Bridge.

343. The railway would be on one floor and the ordinary traffic on the other floor?—Yes.

344. (*Mr. Hunt.*) It would be like the high level bridge at Newcastle reversed?—Yes.

345. (*Sir Joshua Jebb.*) How do you pass Hungerford Bridge?—Underneath, in both cases.

346. With what headway for the road?—There would be plenty of headway under Hungerford Bridge. I rise from Whitehall Place with an easy ascent till I come to Waterloo Bridge, by which time I am sufficiently high to be on a level with the bridge.

347. At what level would the rails be?—Ten or twelve feet above the embankment.

348. Then you would want about 16 feet from the level of the rails to the level of the road?—Yes.

349. That would be 26 feet above Trinity high water mark?—It would be more than that to the top of Waterloo Bridge; it would not be 26 feet under Hungerford Bridge it would rise up to 26 feet after passing Hungerford Bridge.

350. You cannot pass Hungerford Bridge on a level?—Both viaducts would pass under that bridge; afterwards the roadway viaduct would rise sufficiently high to pass across Waterloo Bridge, the railway viaduct under it.

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351. You would have the road and the railway side by side at Hungerford Bridge and not one over the other ?—Yes.

352. (*Mr. Hunt.*) What would be the gradient of the roadway ?—Very little; it would be the same as the rise in the Strand from Whitehall Place till it comes to the level of Waterloo Bridge.

353. How high would you be above the terrace of Somerset House ?—The upper viaduct would be on a level with it.

354. (*Sir Joshua Jebb.*) How do you pass the Temple Gardens ?—By a double open viaduct; the Gardens would be materially increased in size, and therefore it would be a great boon to them; they would be more than double the size they are now.

355. Is the structure to be of iron ?—Yes. I do not propose to interfere with the existing shore; the existing water privileges are not disturbed.

356. (*Mr. Hunt.*) Have you formed any estimate of the cost of your scheme ?—This plan originated in 1852 for a pile railway. We calculated the whole cost at 500,000*l.*

357. Including compensations ?—It is difficult to see who there would be to compensate before landing at Queenhithe, and very few there.

358. I include compensation if any is required ?—Yes; because literally the wharfingers are benefited, inasmuch as they have their existing wharves left as now, and in front of the wharves they have always floating water, instead of mud generally.

359. (*Chairman.*) How do you provide for the low level sewer?—That goes within the embankment.

360. You have an embankment enclosing your water ?—Yes.

361. The road does not go to the outer edge of the embankment ?—It goes almost entirely upon the edge of the embankment, after passing Hungerford dock; the embankment would be 40 feet wide. The existing privileges are not in the slightest degree interfered with. Whitehall Gardens would be improved by the vast addition which would be made to them, and there would be nothing in front of them. Then in front of Somerset House there would be a large piece of ground available for gardens or anything else. In front of Temple Gardens there would be a great addition to the gardens, and there would be nothing in front but a beautiful viaduct. The viaduct would have the advantage of masking the present ugliness of a great part of the existing shore without disturbing the wharves.

362. Standing in the Temple Gardens and looking across the river, supposing your scheme to be carried out with the railway at one level, and the ordinary road at another level, what would be the appearance of the viaduct ?—The pillars might be 60 feet apart; you would look through a large opening; probably in front of the Temple Gardens there would be three or four pillars supporting a flat viaduct on which light railway carriages, made for the purpose, would run.

363. There would be two storeys, one above the other ?—Yes; the upper one would be the ordinary roadway.

364. (*Mr. Hunt.*) How wide would it be ?—Forty feet, with brackets of 10 feet each side for the pathways.

365. The railway would be the same width ?—Forty feet, without brackets; of course all that is matter of detail.

366. (*Capt. Burstal.*) What is the object of having a dock between Somerset House and Arundel Street ?—It is not necessary. The roadway viaduct would open up communication with Norfolk Street and Essex Street by branch viaducts.

367. Between Temple Gardens and Blackfriars Bridge you come to the City Gas Works. Do you propose that there should be a dock there to contain the barges of the Gas Works ?—Yes. The roadway terminates here (*pointing to Blackfriars on the plan*), because it is unnecessary to carry the road further, inasmuch as New Earl Street will connect that road with the city.

368. What level will that be there ?—About the level of Chatham Place. It will be about the same level all the way.

369. What level will the rails be there (*pointing to the plan at Southwark Bridge*) ?—Fourteen feet above high water mark, or more; our level would have to correspond with the level of Cannon Street. We should have no property to buy of any importance; we should cross Thames Street with the viaduct, and then go through the back streets to Cannon Street.

370. (*Mr. Hunt.*) There would be compensation to be made there ?—Yes; but we did not calculate anything about that in the first instance.

371. Is that included in the 500,000*l.* ?—No; that is an additional matter. We contemplated then stopping at Southwark Bridge.

372. That extension is *plus* your estimate ?—Yes.

373. (*Capt. Burstal.*) What do you contemplate the traffic would be ?—Passengers only. The traffic would be so immense, that a fare of one penny or twopence would bring a large revenue. The traffic was taken five or six years ago between Charing Cross and the City, and it was found that no less than 200,000 persons went in cabs and omnibuses, without taking into account the 30,000 going by boats. There being nothing to pay for the ground upon which you place your viaduct, you get an advantage which is rarely to be met with. I assume that the ground is not to be paid for; that it is given up for that purpose. This plan is perfectly simple; it gives the means of transit from one part of London to another, and does not interfere with existing water side privileges. It is the result of many years' consideration and inquiry.

374. (*Mr. Hunt.*) Do you apprehend anything from the accumulation of mud ?—Not at all, because there would be two or more gates to each basin; they would be dealt with as docks are ordinarily dealt with.

In the event of Her Majesty's Royal Commissioners confining themselves to

1st. Providing a place for the low level sewer;
2d. Getting rid of the mud banks at low water and
3rd. Opening up new means of communication between the City and Westminster by an ordinary roadway only (without a railway),

T. E. Weller respectfully begs to remark that his line of embankment and docks accomplish the 1st and 2nd points, and without detriment to existing waterside privileges; and that the 3rd could be accomplished (provided New Earl Street be completed) by a single viaduct commencing at Whitehall Place, running under Hungerford and Waterloo Bridges, and terminating at Chatham Place, Blackfriars.

Moreover, from the great width of the arches of Waterloo and Hungerford Bridges, the viaduct might be constructed wide enough to admit of a horse tramway being made alongside the ordinary carriage road, if thought desirable.

The witness withdrew.

Mr. George Aickin examined.

Mr. G. Aickin.

375. (*Chairman.*) Will you give the Commissioners a description of your plan as shortly and comprehensively as you can ?—It is proposed that the river should be embanked on both sides from Westminster to London Bridge, the line of embankments being curved, and the widths of the river arranged, as far as circumstances would permit, in conformity with the rules which regulate the flow of water. Including both sides of the river two arches would be cut off from Waterloo Bridge and three from Black-

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friars. As the latter Bridge is to be rebuilt no unsightly appearance would result from this arrangement. The widths of the river at the several Bridges would be, in round numbers, as follows:—Westminster, 820 feet wide between abutments; Charing Cross, 940; Waterloo, 980; Blackfriars, 760; Southwark, 700; London, 800. The river would then be dredged to obtain an uniform and suitable bed, the gravel, &c. being used for the purposes of construction, and a very simple and efficient protection would be provided to the foundations of the several bridges, which might possibly be affected by the alteration. The scour would be considerably increased by narrowing the river, I presume; and to obviate any difficulty upon that score, I propose that a row of close piling be driven across the river on both sides of the bridges, thus forming a species of coffer dam; the piling to be cut off at the piers, and a few feet wider than them, one foot below low water, and between the piers, to such a curved profile as would allow of an ample waterway, the bed of the river under the bridges and between the rows of piles being formed with concrete. By this means the foundations would not be in any way affected by the scour. The roadway on the north or Middlesex bank is proposed to be 50 feet wide, with footpaths 12 feet wide, giving a total width between the parapets of 74 feet. In addition there would be a space of 10 feet between the footway and the proposed buildings, giving a total of, say, 85 feet required for the quay, which would pass over the several bridges on a level with them. The business transacted on this side appears to require that provision should be made for wharfage for iron and heavy goods, docks for coal and other barges to lie in, landing places for steamboat passengers, storage for corn and other purposes, and lastly for the main sewer. To provide for these requirements I have directed my attention and so formed the roadway as to provide underneath it ample docks, wharves, and warehouses, the letting of which would in itself go far to give a handsome return for the proposed outlay, large though it be. The sewer is proposed to be of cast iron, contained between two substantial walls, one forming the foundation to the inner face of roadway, and the other being the foundation for a wall, upon which shops, public and private offices, and residences would be erected, and form a handsome and appropriate background to the quays of so noble a river as the Thames. On the south side, where it appears provision should be made, in addition to dockage and wharfage, for water space for floating timber, I do not propose any warehouse space as forming a portion of the construction; it would consist of a roadway 40 feet wide, with two over-hanging foot-ways, together 15 feet wide, on the bridge levels; of docks and wharves one foot above Trinity high water, and of a railway between, which would start from the North Kent Railway at the London Bridge Station, passing with a curve over Tooley-street and through the south arch of London Bridge, on piles as far as Southwark Bridge, and continue along the river to Westminster Bridge, or further if required, with a branch to the new Charing Cross Terminus. This railway would obviate the necessity of constructing that through Southwark, which passes through St. Thomas's Hospital. The London, Chatham, and Dover might also run into it, so obviating the constructing the bridge near Blackfriars; and it would afford a means of discharging vessels below bridge, and carry the goods by line to any part of the south bank of the Thames. The length of the north embankment, from Westminster to Blackfriars, is 2,227 yards; from Blackfriars to London, 1,287 yards; the land taken from the river being as follows:—Between Westminster and Hungerford, 56,000 yards; Hungerford and Waterloo, 45,000 yards; Waterloo and Blackfriars, 77,000, making a total of 178,000 yards; then from Blackfriars to Southwark, 24.000; Southwark to London, 3,000; making 27,000; that would be 205,000 yards To this must be added land required for roadway between Southwark and London Bridge, 10,000 yards, making a total of 215,000 yards. From that must be deducted ground required for roadway and sewer between Westminster and Blackfriars, 62,300 yards; and between Blackfriars and London, 36,200 yards, being 98,500, which deducted from 215,000 will leave 116,500. Then you must deduct for land given up in front of Whitehall Gardens, Somerset House, and Temple Gardens, 12,500, and that will leave the total ground for building purposes 104,000 yards. Taking the land required for the embankment and for the different roadways it would leave 104,000 yards for the purposes of building, which would be a clear profit in the shape of land. My estimate for the cost of those works from Westminster to Blackfriars Bridge is 535,000*l.*; from Blackfriars to London Bridge. 309,000*l.*, making a total of 844,000*l.* I I propose that the Metropolitan Board should pay 200,000*l.* of that in reference to the sewer, and also 200,000*l.* on account of the formation of the new road, the remainder to be provided by some other means. This is a section of the embankment at different points (*producing it*). This shews a section of the embankment, appropriated as warehouses;—they are in two tiers in some portions, in others there would be only one. This shows a dock into which vessels would go, and discharge themselves into the different warehouses at the sides or wharves if necessary, and from those docks also, through the 10 feet space I have allowed, goods may be lifted up to the various warehouses on the upper level. The number of those docks would be, of course, arranged according to the requirements of the different places. I propose that the warehouses should be approached from the lower level at the back side also, as well as from this embankment. If goods were taken from the warehouses under the embankment, they would have to be hoisted up to the upper level, but in many cases, such as Thames-street and streets similar to that, all those warehouses would be approached from the low level, a level nearly corresponding with the level I have adopted for my wharf wall. It seemed to me difficult to provide docks inside the embankment, inasmuch as it would interfere with the sewerage; if there is to be any communication between the river and the docks here it must necessarily interfere with the sewer. I do not propose any railway on the Middlesex side, because I think railways in almost all places interfere with the traffic of the streets. When once a railway is constructed, the freedom of the whole neighbourhood seems to be considerably affected.

376. You propose to erect two strong walls about 11 feet apart, resting on concrete, and in that space of 11 feet you propose to put your main sewer?—The second wall would only apply where a dock occurs.

377. In the one case you have two walls with the sewer between them, in the other case you rely upon the bed of concrete?—And throw my other wall to the face of the embankment there (*pointing to the plan*). There are two walls, an inner wall and an outer wall. On the Surrey side I have proposed a railway because it would cause less inconvenience than on the other side, going with a curve underneath London Bridge. This would be an embankment similar to that which I described just now, the railway being on the intermediate level and the roadway above.

378. (*Capt. Burstal.*) How do you propose to deal with the part between Temple Gardens and Blackfriars?—I propose to erect warehouses.

379. How do you propose to deal with the present City Gas Works?—Those can be approached by docks of this description.

The witness withdrew.

Mr. William Bardwell examined.

Mr. W. Bardwell.

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380. (*Chairman.*) Well, Mr. Bardwell, you have been about your plan a long time?—Yes, my Lord; this is the same which I had the honour to explain to you some time ago.

381. Will you state to the Commissioners the plan which you propose? — I am very desirous indeed that no buildings should be erected along the banks of the Thames in front of those already existing; for this would be an aggression on public rights, interfere with the ventilation of the streets, and degrade the river to the character of a canal; also that no locomotive engine should on any pretence be allowed. A railway was projected along the quays of Dublin many years ago by Mr. Vignoles, but the citizens wisely rejected it for reasons which are doubly strong in London. Also that no road of any description should cross any of the present bridges at their roadway level, but that the contemplated viaduct should pass beneath, for the elevation of the bridges will allow quite sufficient headway for this purpose, and thus avoid the endless collisions which must otherwise occur, and preserve the harmonious proportions of the bridges, while the traffic between Westminster and London and that over the bridges would thus be perfectly uninterrupted. In the design before the Commissioners, these views are combined with every other desirable advantage of which the subject is capable. It may be described as a viaduct of brick and stone retaining walls 100 feet wide and four feet above Trinity high water mark, from Westminster Bridge to Queenhithe, having lateral communications at Whitehall, Norfolk Street, Temple Lane, Tudor-street, and Chatham Place, carrying a roadway, tramroad, and pathways, planted with trees from end to end; inclosing wharf basins in front of business wharves, and pleasure grounds in front of public and private buildings. The earth necessary for these purposes will be dredged from the river bed, so that the new channel will have a greater and more uniform depth of water than at present. The wharf basins afford access to every wharf along the bank except four; their arched entrances over which the road passes at an inclination of 1 in 50 are 40 feet wide and 10 feet high above high water, or 20 feet at half ebb and half flood, the covering of the great sewer forming the entrance sill; and the bottom of the basins is brought to the level of this sill throughout so that the barges ground upon a perfectly smooth platform. The headway beneath Waterloo Bridge will be 28 feet, and beneath Blackfriars 20 feet; but if the roadway were sunk at that part to high water mark, then the headway at Blackfriars second arch will be 24 feet. The area occupied by these improvements will be 50 acres, of which 20 will be occupied by the roadway, 18 by the wharf basins, and 12 by wholesome breathing places. The estimate for the 2,850 yards of viaduct, and dredging, and great sewer, is 427,500*l.*; four entrances to wharf basins 20,000*l.*; six culverts 6,000*l.*; contingencies and compensations 46,500*l.*; making a total of 500,000*l.* With regard to the approaches, the houses in Bridge-street must be cleared away by the Government; the clearance between Queenhithe and Cannon-street will be done, I have no doubt, by the public-spirited, indeed I may with truth say the noble-minded, citizens of London, 10 houses in either case being, probably, all that are required to produce on uninterrupted accommodation 100 feet wide between the widest part of the city of Westminster and the widest part of the city of London. My plan combines every desideratum, and every addition to it, or any coming short of the points of union will detract from its beauty and convenience. I may further observe that a first-rate contractor will undertake to carry it out for the above sum, but the idea having been so long published, there will no doubt, like the idea of intercepting sewers, be plenty of followers, as was seen in 1850 and again in the Committee last year.

381. You carry your line of embankment out considerably beyond what is called Mr. Walker's line?—I do not know Mr. Walker's line, but I have been guided by the quantity of water you want for the barges, and also by Captain Burstal's plan of the river, by which you get a more uniform width of stream from certain points, it nowhere being less than or so little as the breadth at Southwark Bridge.

382. Do you take in the second arch of Waterloo Bridge?—Yes.

383. That archway through which the steam-boats now run would be occupied by your embankment?—Yes. I cannot call it an embankment because I think we should get rid of the word "embankment" altogether. I call it a viaduct, — that is what is wanted; and I should dredge a new channel for the steamboats, the ballast of which new channel would make the viaduct. All that we want is, first, the means of carrying the sewage away, without interrupting the thoroughfares and streets; and secondly, a way from the widest part of Westminster to the widest part of the city; all other things are extraneous to these.

384. Should not the streets now leading from the Strand to the waterside be continued on to your new road?—That is provided for. I have lateral communications with Whitehall, Norfolk Street, Temple Lane, Tudor Street, and Chatham Place.

385. Do you think that those would be a sufficient number?—It would be easy to add to them.

386. You enclose, as you say, several acres of water, and you give access to that water by narrow openings through your viaduct?—By openings 40 feet wide, which is sufficient for all vessels which now use the wharves above bridge.

387. And you carry your road over all those openings by bridges, up to which you give rise by a gradient of 1 in 50?—Yes.

388. Making therefore an undulating line of road?—Yes, but the undulation is very small indeed, as compared with the length of the viaduct; and there are only four bridges, one to each basin.

389. With regard to the tidal basins, have you had any communication with the wharfingers as to whether they would be satisfied with the barges having to come through those openings?—I think that Captain Burstal stated in his evidence last year that the wharfingers were in favour of tidal basins. I have myself had no communications with them, except Mr. Saunders; there are only four I interfere with at all, and I provide 40,000*l.* compensation for them.

390. Between Hungerford and Waterloo Bridges you have two entrances into the basins, and between Waterloo Bridge and Blackfriars Bridge you have four entrances into tidal basins?—Some of those are culverts for cleansing them.

391. That leads us to the question of mud?—There would be no mud in those. The great principle first of all is that the covering of the sewer must form the sill to those tidal basins. I level the tidal basins to a hanging level with the top of the sewer, so that there would never be any mud. I should raise the level also with concrete.

392. Do you mean that at that inclination the mud would slide down into the river?—Partially, and it could be easily swept into the river.

393. In fact you mean that the whole surface of those basins, the floor as it were, should all of it be formed at an inclination running down towards the river, and all of it paved?—No; the gravel which now forms the bed of the river would simply be mixed with a little lime, and make a sort of concrete, in the same way as has been done in front of Calvert's Brewery; that is what I propose the barges to sit upon; no mud is seen there.

394. In your opinion there would be no greater accumulation there than might easily be swept out from time to time at low water?—There would be no

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accumulation of mud at all, as is proved by the instance I have just given you, which any one may see.

395. Do you mean that it would go away of itself?—Perhaps not altogether; but with a little assistance it would.

396. You have had no communication with the wharfingers with regard to accessibility, nor with barge-owners?—No, but your lordship remembers the different schemes in former times for the embankment,—Sir Frederick Trench's, and Mr. Martin's in 1830, and Sir Edward Banks'; they all failed through carrying the sewer in front of the wharves, and destroying the wharfingers' property. A viaduct is the only means by which all the difficulties can be met. I maintain that the wharfingers would be all the better for having those tidal basins, because there would be less mud at the wharves than at present, so that they would have more water than now, and for a longer period of time. But if you have docks with locks and gates I apprehend a question of jurisprudence would instantly arise, and every wharfinger would have ground for an action at law against the Commissioners for obstructing his ancient right of way to his property.

397. (*Capt. Burstal.*) At what time would a barge be able to get into these basins?—The traffic on the river is always at half-ebb or half-flood, and the barges could enter at all times until within two hours of low water; the top of the sewer is three feet above low water mark; you must add for the covering two feet, so that it might be five feet above low water.

398. The question is what must it be?—It would depend upon the diameter of the sewer; mine I think is five feet in diameter.

399. Supposing the top of the sewer to be 13 feet below Trinity high water mark, you might get in two hours before high water?—Yes, and at all times except shortly before low water.

400. If there is a detention at the dock entrance by the barges taking their turn—do you think that the wharfingers would economise in time?—There would be no detention because I have no lock gates; I say that there should not be locks but open tidal basins, accessible at all times as the river is now accessible to the wharfingers and better than at present.

401. The water goes out at every tide?—Yes; just as you see in front of Calvert's Brewery.

402. You would have no gates?—No.

403. (*Chairman.*) You have drawn your sewer six feet in diameter; is that sufficient to serve as the low level sewer?—I apprehend that six feet would be ample to receive the sewage from Victoria Street, and from the Hartshorn Lane sewer.

404. If it were more than six feet it would alter the level of your sill?—Yes, and lessen the accommodation.

405. It would make the level of your sill higher than you have shown it?—It would make the level of my sill higher than I have shown it, and reduce the depth of water in the basins.

406. Do you think 6 feet would be sufficient for an intercepting sewer to take all the sewers which now enter into the Thames?—I apprehend that it would as far as Blackfriars; there are only three principal sewers which come in that length, and from Blackfriars Bridge it might be larger.

407. Supposing it were found that the capacity was not sufficient, you would have to raise the sill?—Yes; if you wanted it eight feet in diameter it would be one foot higher than I have put it; but you might make the sewer double, and so double its capacity.

408. What has guided you with regard to the level of that sewer?—I think it is the level of the Victoria Street Sewer that must be the datum. But I have always maintained that that sewer was put a great deal too low. The sewers in Westminster wanted to be raised, instead of being lowered

The witness withdrew.

Mr. H. G. Coomns examined.

Mr. H. G. Coombs.

409. (*Chairman.*) Are you a civil engineer?—I am an ironfounder, but I have given attention to engineering matters in general.

410. Will you describe your plan?—The embankment by my plan is proposed to be a continuation of Millbank, and to terminate at Tower Stairs. It is proposed to contain the low-level sewer, which would be carried beneath the terrace of the Westminster Palace, and also of Somerset House, directly on to Tower Stairs, where it would either diverge inland or be carried at a lower level along the river bank, in order to avoid the dock entrances. The entrance to the road would be at Westminster Bridge, where the carriage way would be formed on the top of the embankment as far as Whitehall Stairs, whence it would commence to rise by means of a viaduct up to the level of Waterloo Bridge, making use of the terrace of Somerset House, and continuing on from bridge to bridge until its arrival at London Bridge, where it would stop. A dock would be formed by the embankment between Westminster Bridge and Waterloo, accessible at high water to barges by floating over the embankment, which would be at a lower level at this point. I only propose an embankment about the width of 45 feet, except where it forms the dock wharf; there I propose that it should be 30 feet. I should not contract the river any more than I could help, as I do not see the advantage to be derived from it, and the mud banks would be in a great measure done away with by the conveyance of the present sewage to Erith. I think that the expanse of water which we have now is very beneficial in a sanitary point of view to the metropolis. I have not proposed any railway. I think that the additional facilities which this embankment would afford would remove the necessity for one between Westminster and the city. As regards economy I have made no estimate of the cost, but I think that it is as cheap a plan as could be proposed to combine an embankment with a roadway.

411. (*Capt. Burstal.*) Do you propose to go underneath all these arches to the existing wharves?—Yes.

412. Leaving the shore of the river in the same state as now?—Yes; only extending it 45 feet on the river bed, excepting between Westminster and Waterloo Bridges, where I propose to make docks.

413. (*Sir Joshua Jebb.*) How do you communicate between the river and the docks?—The docks extend 45 feet into the river and the communication is under the proposed roadway.

413 *a*. (*Mr. Hunt.*) Without gates?—There would be no gates.

414. (*Sir Joshua Jebb.*) Would you have a tidal dock?—No tidal dock; it would be as at present, except 45 feet would be added on to the frontage. It seems almost a pity that such a fine prospect as we have now at Waterloo Bridge should be destroyed in the way it would be by some of the proposed plans.

The witness withdrew.

Mr. WILLIAM PAICE examined.

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415. (*Chairman.*) Are you a civil engineer?—I am in the profession. I am one of the firm of Wilkins and Company.

416. Is it your plan which has been sent in?—No; it is a plan prepared by myself and another party.

417. Is the other party a civil engineer?—Yes. The chief objects of this design are economy and the least possible encroachment upon the Thames. It would only occupy 30 feet, and contained in that 30 feet there would be two tunnels, one in the encroachment, and one outside the encroachment on the present ground.

418. Do you know anything about the condition of the present ground as to the possibility of making a sewer there? Do you know what the engineering difficulties would be of making a sewer there?—I will not say that I understand what difficulties may have to be encountered; but they cannot be much, inasmuch as the sewer will not be above 15 feet on to the Thames.

419. You do not know the quality of the soil there?—No.

420. (*Sir Joshua Jebb.*) You are not aware of the strata through which you propose to work?—I am not.

421. (*Capt. Burstal.*) What is your estimate?—We put down originally two millions and a half; but I have since gone into it somewhat in detail, and I consider that an embankment with a railway would cost a million and a quarter, with compensation.

422. (*Chairman.*) Would that be including the construction of warehouses?—No.

423. You propose a railway?—Yes.

The witness withdrew.

Adjourned to Monday next at 12 o'clock.

Monday 6th May 1861.

PRESENT:

The Right Hon. The LORD MAYOR.
Major-Gen. Sir JOSHUA JEBB, K.C.B.
JOHN THWAITES, Esq.
Captain D. GALTON, R.E.
Captain BURSTAL, R.N.
HENRY ARTHUR HUNT, Esq.
JOHN ROBINSON M'CLEAN, Esq.

The Right Hon. The LORD MAYOR in the Chair.

Major J. F. WIELAND, of Liverpool, examined.

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424. (*Chairman.*) Will you state to the Commissioners whatever you may think necessary in order to give them a general outline of your scheme?—In the first place I propose a river wall starting from new Westminster Bridge in a line with the existing embankment of the Houses of Parliament, and taking either the line that is laid down here upon this plan (*pointing to the plan*), or another line which I think will be still more advisable, and which would be more easily described, perhaps, by stating that I would like to bring it to something like the present line of the steamboat piers. I should pass along from Westminster to Hungerford, then on to the first arch of Waterloo Bridge, from thence taking a curve to Blackfriars Bridge; then along to Southwark, and so on up to the first arch of London Bridge. This map shows where we allow a waterway under the first arch of London Bridge; but if permitted I would bring the wall straight up that, so as to shut up the first arch. I should raise a wall three feet above high-water mark. From the Houses of Parliament or Westminster Bridge up to Whitehall Gardens a large space of land would be obtained from the present river banks, which would be available for any large public building. I imagined five or six years ago that it would be a fine position for the Law Courts, but it could not be appropriated to that purpose now. Nevertheless, it would be a large space available for a handsome building, to form a contrast to the Houses of Parliament on the opposite side of Westminster Bridge. From the commencement of Whitehall Gardens to their end, passing along the front of the Duke of Buccleuch's, I would propose simply an embankment, to extend along the gardens of Whitehall and all those houses in Whitehall right down to the river front, as they now have it. I do not think the proprietors of Whitehall Gardens would allow a public road (nor do I propose any) to be carried along the back of their houses. I propose to extend Whitehall Gardens so as to increase the garden of each house by the depth of the embankment. Then at Scotland Wharf, where coal barges now lie out in the river almost to the pier of Hungerford Bridge, I would make a coal emporium for the West End, and so forth. Underneath the first part of the whole embankment, immediately behind the river wall, I would lay in the great trunk sewer necessary for the low level sewer from Westminster to London Bridge. Then, when we come to Hungerford, I propose a raised road upon the level of the present bridges and the Strand. The road would be formed either upon iron arches or upon brick double groined arches, as shown in the drawing for the north side. This esplanade would be about 35 feet above the embankment wall, and would join the roadways of each of the bridges, on their levels.

425. Do you mean 35 feet distant from the edge of the embankment, or 35 feet high?—No; 35 feet high, more or less; it varies according to the bridges. It would be a distance from the embankment inwards of 40 or a less number of feet, according as we find room towards London Bridge. I would propose an open quay 40 feet wide before you come to the road; then the road would be raised above that, and would be inwards from the river 40 feet from the river wall, and 35 feet high above the embankment.

426. (*Sir Joshua Jebb.*) 38 feet above Trinity high-water mark?—Yes. That would be all subject to modification. It would conform to the approaches of the bridges. The entrance to the esplanade from Charing Cross would be through Hungerford Market, or rather along a widened street that will be made for the Charing Cross Railway. Thus vehicles would proceed from Hungerford Bridge in a line almost parallel to the Strand the whole way, and thus relieve the Strand, Fleet Street, Ludgate Hill, and Cheapside. This road I should propose to be 80 feet wide. It would communicate with the approaches to each bridge. I would open up, if allowed, a new road from this esplanade upon a level to St. Clement's Church. And I would open out another road, 60 or 80 feet wide, to one side of St. Paul's Cathedral, over the present Doctors Commons, so that you would get a view of the south side of St. Paul's from the esplanade. The esplanade would pass along the front of Fishmongers' Hall at the level of their dining-room windows.

427. (*Chairman.*) You mean the level of their lofty terrace?—Yes; upon the level of London Bridge approach, in fact. Then from the lower part of Hungerford Market I would have a railway laid in

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under the esplanade road which forms the covered quay-way 80 feet deep. This railway would run from Hungerford Bridge to London Bridge, having a terminus at each of the bridges, or at convenient points along the line.

428. At what level would you have that railway?—Below the level of high water; it would be immediately below the covered quay under the esplanade.

429. Formed in the embankment?—Yes; it would be about 10 feet below the level of high water. Then immediately behind this embankment and the road I have just been speaking of I would build contiguous thereto stacks of warehouses, which should have their river communication direct under the double groined arches, and their land communication by the low level road, answering to the present Thames Street and Earl Street, Blackfriars.

430. You propose to make a low level road?—No. At the back of the warehouses I would not make any low level road. I would simply use Earl Street, Blackfriars, and Thames Street for that; and where the large new warehouses are near Blackfriars and Southwark Bridge, the large flour mill, and the other large warehouses that are along the line, I should bring the road immediately up to and along the front of them, and, if necessary, only alter the fronts of those warehouses for architectural purposes, if we determined upon one style of architecture from bridge to bridge, which I should propose should be the case. So that we should not in any way interfere with the large present existing warehouses. We should not have to pull them down; but over those spaces now *not* built upon, or which are used as yards, besides the present wharves, I would raise those warehouses, and upon the top of those again there would be a building, which should be used as shops, and above that again other warehouses or dwelling-houses, the warehouses having their entrance from Earl Street, Blackfriars, and communicating direct with the river under the raised esplanade, the shops having their entrance from the raised esplanade, and of course the upper dwellings in the same way. By this means I believe that the enormous expense that this road might entail would be compensated for, by, firstly, the amount of ground that we should recover from the river, and, secondly, by covering that ground to the height of 7 or 8 floors altogether from the ground to the top, having those warehouses built fire-proof, so that the shops and dwellings above would stand no chance of accident from the stores beneath them. There would be no communication along the quay-way for ordinary passengers whatever. The quays, both open and under the esplanade, would belong exclusively to the warehousemen who hold the stores adjoining the quay; and every one might, if he chose, build inner side walls, so as to have his warehouse closed from the general and open quay-way. Thus each wharfinger or warehouseman, instead of having, as he now has, his wharf and warehouse side by side, would have his warehouse where his wharf now is, and his wharf would be extended into the river 120 feet, giving him 40 feet of open quay-way and 80 feet of covered quay-way. Thus goods might be landed from the barges under cover, the same as they are at the docks at the present moment. Having that advantage of landing their goods at once under cover, there would be no necessity for the barges to lie in the river, as they now do, causing the obstructions which they have caused, and according to all the evidence which has been given, both in 1844 and since that time, injuring very materially the bed of the river by causing cross currents and so forth. Furthermore, I believe, this plan would be economical, from the fact that the warehousemen would always be able to unload and load their goods at any state of the tide, and they would not have to keep those barges lying in the river, at an enormous expense, as floating warehouses. I think that the claims of the wharfingers are more to be studied in this case than those of almost any other class we have had to deal with in the whole affair.

431. (*Sir Joshua Jebb.*) Do you refer to any particular part of the river where the wharfingers' interests are greater than at others?—The wharfingers are mostly from Blackfriars Bridge to London Bridge, and we might consider that the buildings would not be carried much further than Blackfriars Bridge, because when we come to the Temple Gardens, which is a very important point to consider, I propose to raise a high wall on the inner side of the roadway, so that people passing along the raised esplanade would not be able to loiter there, and look over that wall into the Temple Gardens.

432. How high would you have the wall?—15 feet high. On the Temple Gardens' side I propose to throw gothic arches into the wall, and make niches, in the way shown on this drawing, so that it would appear from the Temple Gardens like the side of a cathedral, and if they chose they might have open arches, and still retain their beautiful view of the river through those open gothic arches; or if they chose to fill it in with glass on both sides, they would be able to make a winter garden the whole length of the river front of the Temple Gardens, 35 feet high and 80 feet broad. We should not curtail the gardens in any way, but should add this 120 feet in width to them and give them a covered promenade, as well as retaining for them also an open promenade 40 feet wide, similar to that which they now enjoy.

433. (*Chairman.*) You come on to your road, which you call an esplanade, from Charing Cross?—Yes.

434. You do not do anything towards relieving the traffic or shortening the distance from Westminster to the city?—No; only this railway could be carried quite easily in the embankment along to Westminster Bridge, if necessary.

435. When you get down below Southwark Bridge you still go on till you get to London Bridge?—Yes.

436. Has it occurred to you that in diminishing the breadth of the river there you would be risking the navigation of the river?—It has; and on that account I propose on the south side to cut away a portion of the present bank of the river, and give a more perfect sweep and clear flow than it now has.

437. You spoke of a *coal* emporium; is that the surface of the ground for coals to be heaped upon?—The surface of ground to be appropriated to any purpose for which it might be thought to be most convenient. At present it is used as a coal emporium.

438. By barges lying there?—Yes.

439. What you propose is to make that solid embankment?—Yes.

440. And if used as a coal emporium it would be for piling the coals on the surface of the ground?—Yes.

441. Whereabouts would you bring in the low level sewer?—The low level sewer could be brought in at Westminster.

442. Your railway will be under the level of your embankment, the top of which is three feet above Trinity high-water mark?—Yes.

443. What clear headway do you propose to have in your railway?—About twelve feet.

444. In what manner would it be worked?—I should propose that it should be worked by ropes instead of steam, but I am not wedded to that plan.

445. How would you provide for light and ventilation?—Light and ventilation could be obtained by reserving spaces among these warehouses here, opening up to the top.

446. If I understand your plan, the railway lies close against the river front of the new warehouses?—The railway lies close against the river front of the new warehouses.

447. Then the light and ventilation which you propose to get would be obtained by open spaces here and there in the esplanade?—Not in the esplanade; in the quay-way above only, because you have plenty of height.

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448. Your openings would be under the esplanade?—Yes.

449. Would they encroach upon the buildings at all?—Not at all.

450. Do you contemplate erecting any of those buildings in front of any existing property?—No; not in front of any of the large existing property.

451. Have you an estimate of your plan?—No; I would not attempt to make an estimate; any estimate which could be made would be fallacious.

452. It would be our duty to report upon the cost of any scheme which we might recommend, and we are also to indicate how the money is to be obtained?—The real cost of the thing would not be the cost of building the embankment, and so on. The greatest expense of any undertaking to embank the Thames would be the amount of compensation to be given to the warehousemen and wharfingers, and that cannot be estimated till it is decided by juries.

453. (*Mr. Hunt.*) Can you tell us the cost of the works without compensation, irrespective of the warehouses, taking your quay and esplanade?—I have not made that calculation.

454. How do you treat Somerset House?—The roadway comes in front of Somerset House, leaving the present terrace as it stands, being on a level with the terrace of Somerset House.

455. Your esplanade would be on a level with it?—Yes, not encroaching upon their ground; the 80 feet road would join their terrace; their lions would form the side of our road.

456. (*Mr. Thwaites.*) Have you formed no approximate estimate of the structural cost, apart from the question of compensation?—No, I have not. I could possibly supply it to you in the course of a week.

457. Do you think that it would be about three or four or five millions?—I would not dare to say what it would be. I will send an estimate.

458. (*Captain Burstal.*) With respect to your coal emporium at Hungerford, do you propose to unload the coals at the outside part of the embankment?—I am not wedded to making that coalyard.

459. If you have that coal wharf there, how do you contemplate that the coals would be disposed of?—They would be landed, and taken away. I do not see why they should lie there. The only reason why Scotland Yard is used for that purpose now is that it is the most convenient part for coals for the West End. If it were necessary, instead of letting the barges lie there, to unload them, and take the coals away, we might find a piece of ground at the back of this ground quite large enough for that, and we might have handsome houses along the front of the river.

460. (*Sir Joshua Jebb.*) Your line of embankment might be taken further out than the steam boat piers?—Yes. I simply say steam boat piers, for this reason,—they are about the line of low water, and it would be better for us to get sufficient water at the quays, if possible.

461. (*Captain Burstal.*) You said that you could unload at any state of the tide. I apprehend from that that the line of embankment which you have made would be inside low-water mark?—This is inside low-water mark; but if we brought it out to the line of the steam boat pier we should be able to unload at any state of the tide.

462. Your embankment would come further out into the river than the steam boat piers?—No.

463. You shut out by your plan all the present frontage below Blackfriars Bridge?—Here is a flour mill (*pointing to the plan*). We should bring the road close to the flour mill, and make the flour mill available.

464. What would you do with the other buildings?—The present wharves we should shut up entirely, buy that ground, and build other warehouses. The buildings would present somewhat the appearance, if carried out to the full extent of my idea, which Somerset House now presents from the river side.

465. Under any circumstances, the cargoes from the barges would have to be unloaded on to the wharves, and then transmitted into the warehouses?—Yes.

466. (*Mr. Hunt.*) Are you an engineer?—Not professionally.

The Witness withdrew.

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467. (*Chairman.*) Will you give us a general description of your plan?—The whole of these plans, or rather the general plan, which gives the best idea of the whole, is based on the evidence given before the Thames Embankment Committee in 1860. I believe it will be found on examination that there is no part of this plan which is against any decided point made in the evidence given before that Committee, but, on the contrary, the evidence given before the Thames Embankment Committee, so far as it seemed to sway the Committee's report, has been considered, except only in one point. The Committee propose that the carrying out of this scheme should be committed to the Metropolitan Drainage Commissioners; in that I do not concur; and I will give you the organization, I propose when we come to the proper stage for it. The main interests to consult in the case I take to be the public, who want good roads and communications alongside the river; the cleansing of the river itself, which is also a matter of public interest; and the navigation, which ought to be, and I believe would be, improved by this scheme being carried out. Next, the interests of the owners of property, first of all ornamental property, which I think would be also materially improved by that plan; and, secondly, trading property, which of course is a matter I speak with some diffidence upon, which also would be materially enhanced in value by the adoption of that plan; and lastly comes the question of the means of paying for the work, including the compensation to be given. The general plan shows the line proposed for embanking the river between Westminster Bridge and Queenhithe, the narrowest part at Queenhithe being maintained, as at present, with about 230 yards of water-way, and the widest part at the bend of Hungerford, being 280 yards of water-way at half-tide, and about 340 yards at high water. I have been guided in these lines rather by what has been received as the opinion of my brother engineers, in which I to a certain extent concur, than by any abstract views. I should like to contract the river a little more at Westminster Bridge, to about 800 feet, rather than leave it wider than that; but it may be said on the other side that it is always susceptible of further contraction if we should find upon any plan being carried out that the flow of water is still producing sandbanks and so forth; and therefore perhaps it would be as well to leave it that width, 280 yards, as at present.

468. (*Sir Joshua Jebb.*) Does your plan take Mr. Walker's line?—Very generally it does so. The available spaces for public purposes along the top of the embankment vary from about 150 feet to 60 feet for roadways and footpaths or promenades. All those spaces are coloured on the plan in light pink; those are the available spaces for public purposes. The spaces available for the sale of lands amount to nearly 85,000 square yards, and are coloured red on the plan. The spaces available for public buildings are coloured yellow on the plan.

469. (*Chairman.*) Is there more than one space so coloured?—The public buildings are Somerset House and a small piece opposite the Board of Control which is coloured green. There is opposite Somerset House 11,000 square yards. The spaces available for private accommodation are coloured green, which are

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chiefly opposite the ornamental property of Temple Gardens and the Privy Gardens. The spaces available for increased accommodation to wharfage and trade are coloured brown; these spaces give a margin of 30 feet wide opposite all the existing trading wharves. Every trader trading at present will have a space of 30 feet opposite his present wharf available for his use. The cross sections show the arrangement of the subway for the sewer at the bottom, the tramway next above the sewer-way, and the road and wharfage space over. The top of the embankment wall, the ordinary roadway, and the ordinary wharfage also, will be four feet above the level of Trinity high-water mark throughout. The only exception to that general level might be required at Blackfriars Bridge, if this embankment were to be constructed while Blackfriars Bridge remained as it at present is; it would be there necessary to dip the road down two or three feet. But I presume Blackfriars Bridge will not remain as it is; therefore the general level of the roadway will remain four feet above Trinity high-water mark. The actual crest of the road would be about four feet six. The sewer space or subway is sufficiently large to admit of separating plates, and thus afford ready examination and cleansing at any point, and to divert the sewage from one point to another point, so that any part of the sewer might be entered. I will next give you the organization I propose to carry out the plan. I propose that the Commissioners of the Thames Embankment be appointed by the Government; three Commissioners to be paid, one of whom should be the Chairman of the Metropolitan Drainage Board; two Commissioners to be honorary, of whom the Lord Mayor of London, should be one, the other the chief Commissioner of Works, and the usual officers,—engineer, surveyor, secretary, and auditor. My reason for making this a separate board is that any board having already large works in hand would have quite enough to attend to without taking such a gigantic work as this; at all events the work itself should be separate from any other. The Thames Embankment Commission should be empowered to borrow, and the Government Loan Commission should be empowered to lend, such sum or sums as the former may require for this work, not exceeding in the whole 500,000*l.*, which should be repaid from to time by sales of land as sold. Any surplus should be placed to credit (to be vested in the Commissioners, for re-sale, with prior right of offer to purchase in favor of owners adjoining frontages), after all the principal borrowed, together with interest, shall have been discharged. Notices of temporary occupation should be served on the owners, lessees, and occupiers of properties required for or interfered with by temporary purposes. Notices of absolute purchase to be served on the same parties whose property may be so required, of which there would be very few. Compensation for temporary damage to property and business should be retrospective as to payment, and should be assessed during the progress of the work, and sent in to the Commissioners as soon as the portion of the works which affects such property shall have been completed, and should then be settled and paid without delay. The principle of assessment of such compensation should be the same (except only as to retrospective operation) as that of the General Lands Act for Ireland. That is an exceedingly equitable Act, far more so than any other that I know which applies to purchase of lands for public purposes. Absolute purchases should be made before commencing the work, and should be assessed on the same principle; and in case of dispute as to temporary damage or absolute purchase, the principle and practice of the Irish Act should apply. I have worked myself for landowners under that Act, and I have had great difficulty in getting anything more than a fair compensation. Fronts on the river for a depth of 30 feet reclaimed and opposite to wharves now used should be let on a lease at a peppercorn rent to present owners (saving rights of present lessees and occupiers) of the said wharves, and should be taken into account in determining any claims for compensation or purchase. The lands reclaimed should be vested in the Commissioners for re-sale, with prior right of offer to purchase in favor of present owners of adjoining frontages (saving also rights of present lessees). Any surplus after paying off loans and interest should be placed to the credit of the present owners of the unreclaimed soil, and the balance, after all charges are paid off, should be paid over to them. I believe those owners are the Conservators of the Thames. Conveniences for trade now enjoyed should be preserved as nearly as possible during the construction of the works; and where it is not possible to preserve the existing conveniences, then substitutes should be provided as nearly as possible equal to the existing conveniences. The efficiency or otherwise of these conveniences should be taken into consideration and account in satisfying claims for compensation. I believe we could work that trade during the construction of these works very nearly as conveniently as it is worked at present. If the plan of a joint stock company be adopted in preference to the organization I have indicated, then similar powers should be entrusted to such company, except that it should not be empowered to borrow beyond the ordidary extent and under the ordinary limitations.

We now come to the estimate. I will give the total by-and-by. The estimate for the embankment works comprises piling complete, concrete and brickwork, excavation and filling, 208,309*l.*; the sewer and tramway works, consisting of girders and pillars, gravel and asphalte, corrugated iron floor, boiler plate and timber rests, rails and fastenings, stations, ventilators, telegraph, and gas fittings, 107,682*l.*; roadway works, consisting of macadamised and channelled roads, with foot pavement, paved for trade, gravelled for public use, and fenced and gravelled for private use and additional roadways and approaches, 45,611*l.* The total of that is 361,603*l.* Then for unforeseen contingencies I put 10 per cent. that is 36,160*l.*, making in all 397,763*l.* That includes the cost of all the sewer, except the junctions of cross sewers. The whole of this sewage should be executed to the satisfaction and perhaps under the direction of the engineer of the Metropolitan Drainage Board; and those junctions would, I apprehend, be better left to his own choice and direction. I see in his own evidence that he proposes to run those cross sewers at present into the sewer running along the Strand, but which probably he would throw into the general line of main sewer if my plan be adopted, and therefore this should be left to his discretion.

470. (*Chairman.*) You have no item for that?—No. It is not a large item; I put 13,000*l.* at one time for it, but I think it is too much. It would not be well to fetter the engineer of the main drainage at all. The purchase of property is 88,635*l.*; it is taken at the rate of 220*l.* or 230*l.* a lineal yard. I have all the detail here. The works for facilitating trade during construction, and in reduction of compensation, would be 59,664*l.* Those works consist chiefly of stageing and craneing. Management during the construction would come to, say, 20,000*l.*, and the interest on loans before the property is made available for re-sale, 22,500*l.*; that gives 588,562*l.* as the gross total. There are some works on the south side of the river represented by the dotted lines upon that plan which are merely works of dwarf piling, protecting the south side from any wash when the river will be narrowed; but I think that those southern works would be better left till the effect was seen of the northern works; they could be readily carried out whenever they were wanted. However, the estimate for them would be 13,812*l.* Then comes the balance sheet, if I may so term it. The expenditure, as I have stated, would be 588,562*l.* Then, on the other side, there are 43,860 square yards of reclaimed land, with a frontage on two roads and the river, giving a total front of 1,450 yards with a depth of 30 yards, and a further front of 150 yards with a depth of 15 yards. Those reclaimed lands ought to sell at 10*l.* per square yard; the whole making 43,860 yards, which at 10*l.* a square yard

gives 438,600*l.* You have excellent advice to guide you upon this Commission as to the value of land; but in the course of my practice I have been asked high prices for land in London. Then, again, there are 40,396 square yards of reclaimed land, with one street frontage, behind this front land, this I have estimated would sell at 4*l.* per square yard; that gives 163,744*l.* There is some evidence to shew that the Metropolitan Drainage Board might be induced, in consideration of works and compensation saved, to contribute 50,000*l.* I put 50,000*l.* for that item; that gives a total of 652,344*l.* on the credit side. I take no credit for rent of lands in front of Whitehall and Privy Gardens, nor the Temple and Somerset House. The total of those is 8 acres (38,660 square yards). And I take no credit for the rent of the tramway, which I might take credit for, which would only amount to about 10,000*l.* per annum, at 16 years' purchase. 10,079*l.* I estimate as the rent for that per annum.

471. You have said that with some trivial exception you have kept to Mr. Walker's line?—Yes.

472. You start from the line of the embankment now existing in front of the Houses of Parliament?—Yes; the embankment in front of the Houses of Parliament is carried onward.

473. Do you recollect where you deviate from Mr. Walker's line?—Only in the general width being greater about Hungerford. I think his line is 800 feet across.

474. Do you go further into the river?—No; rather less into the river I think.

475. With regard to the construction of your tunnel, it seems to be about the ordinary width of a narrow gauge railway tunnel?—Quite so.

476. You cover the lower section of it with a subway, forming a floor for the tramway resting on iron beams and columns?—Yes.

477. And under that floor the sewerage would run?—Yes.

478. Then from the top of the road so formed, from the level of the rails up to the soffit of the arch, you would have 18 feet?—I think it is about that.

479. Then it is ventilated here and there by shafts?—Shafts are marked to show how the ventilation may be done. I do not think that we should require any except at the openings of the stations; it is not a tunnel, but a tramway.

480. Then, in order that your great ring may preserve the integrity of its form, the side next to the river is sustained by piles, which go down to a considerable depth into the ground?—That is so.

481. And which also rise up, battering 18 feet above the low-water line?—From 17 to 18 feet.

482. No doubt you have applied your mind to the subject, and you are of opinion that the tendency to collapse, which would be very strong in that culvert, would be resisted by the iron formation which you have next to the river?—Yes.

483. On the side next to the land there is solidity, but on the side next to the river there would be nothing between the tunnel and the river at low water; at high water you would have the pressure of the water against you, and then you would have nothing to apprehend, except leakage here and there; but when the water is down, and there is no pressure, when the whole weight of the arch, the whole tendency to collapse, is operating: you are of opinion, probably, that what you have provided would be quite sufficient to sustain the work, and keep all true in its form?—I have no question about it. But excuse my saying that I do not admit that there would be a great tendency to collapse. I think that this work would stand as well as several other tunnels which I have built. But if any doubt as to stability exists, such stability might be further assured by land ties of iron, at a total cost of less than 2,000*l.*

484. (*Sir Joshua Jebb.*) Would not there be a great thrust in those iron walls from the inside outwards?—Not quite so, if you consider that that tunnel is to a certain extent buried in excavation, first of all, and in concrete as well as in excavation.

485. (*Chairman.*) You are only about two feet below the low-water level?—That is taking a very low line there; but there is excavation and concrete in which it is buried. Some of the lines are higher and some lower; the first is the lowest. If you observe, the only strain that would be upon this arch of the character mentioned by you is outside of a triangle which represents the angle of repose of that soil. That triangle would be a small triangle, and not a large one by any means, when we speak with reference to the thrust upon the arch.

486. Would not that be to some extent increased by the tremulous motion which the traffic on the road would cause?—Quite so; it would. But this arch, as you observe, is 14 inches bedded in concrete and laid in hard bricks with cement, &c. I have arches even of nine inches over which a considerable traffic is going. I have others 14 inches, over which other traffic is going without any concrete; and while I admit that the London traffic, the wharfage and so on, would be more considerable than in those instances which I have mentioned, still I think that the hard brick and cement and concrete are ample appliances to meet those concussions completely. I have been astonished to see the practical effect of a line of thin brickwork when properly laid in. In the designs of work of that kind on this plan, I think that there is sufficient regard had to the thrust back and the tendency to collapse on the land side. But if any doubt as to stability existed, such stability might be further assured by land ties of iron, at a total cost of less than 2,000*l.* There would be nine inches of metalling besides the brickwork. This space of 30 feet over the tunnel is wharfage space. No carts would touch this at all; and where it becomes a public promenade it is walking space, and not carriage space. The wharfage space is the worst case I could shew you of concussion. If you remember, at Liverpool, where very much the same thing obtains, and where for about 30 feet from the paths there are spaces for the deposit of goods, which afterwards go away either by the roadway or are taken into warehouses, there the concussion is very small, and it is only loading and unloading from the vessels on to the wharf. No carts go on that particular space.

487. (*Captain Galton.*) The railway is intended to commence at Westminster and to terminate at Queenhithe?—Yes.

488. It is not intended to communicate with any any other railway?—Not on the present design. It could so communicate; but the expense would be so great that I do not think that it should enter into the question of a Thames embankment. I mean the expense would be so great, and it is so extraneous to the question of the Thames embankment, that it ought not to be taken into consideration by the Commission; but the tramway might communicate with other railways, east and west, if expense were no object.

489. Then it would have to be worked by locomotives?—Not necessarily.

490. You now propose to work by horses?—In the first instance.

491. Do you attach any great importance to the railway as a means of communication, if it is not to assist in dispersing the traffic of the existing railways?—I attach only this much importance to it: There is a large traffic by the steamboats, and there would be a much larger traffic by the steamboats if parties could come down immediately from the Strand and the other streets to those boats, without having long lines of wharves to descend. To a certain extent, this tramway will take a great deal of the traffic which does not go to the boats, by reason of the superior convenience of the omnibuses. In this plan there are many streets, which I did not advert to in my general description at Whitehall Place and at Westminster, which lead into the general public

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roadway, and also, of course, into the tramway; and I calculate that the traffic which could afford 2*d.* instead of 1*d.* to go from Westminster to the city would be relieved by this railway. My estimate of the number of passengers is 10,000 a day.

492. Would not the omnibuses have a great advantage over the tramway, in that the tramway only stops at certain stations, whereas the omnibuses will stop wherever you like?—In so far it would; but I am not so much guided by the omnibus traffic as by the boat traffic. The boats only stop at certain stations now, and it is becoming a very inconvenient mode of conveyance, because the penny people have overridden the twopenny people, and ladies will not go by the boats when they have to go with people with short pipes and red herrings. Hence a very great number of passengers would come along the tramway, but passengers for only a short distance would not go by the tramway; but how few those would be may be judged by the omnibus traffic. A passenger from Charing Cross who pays 3*d.* by omnibus seldom stops short of the city.

493. This would land him at Queenhithe?—I should have stated that the stations of this tramway are five in number, estimated at 41,000*l.*

494. One station would be at Westminster, one at Hungerford Bridge, one at Waterloo Bridge, and one at Queenhithe?—Quite so.

495. Between those places it would not land passengers?—No; you would be in a tunnel.

496. Without light?—Gas is estimated for.

497. You say you pay for damage retrospectively?—Yes, as contradistinguished to the general practice. At present, if a public work is going forward, the owners of property are called upon to state their claim for compensation; that claim is always an ideal claim, and each man views his injury through a large lens; now when the work is completed that lens becomes reversed; the fact is that the damage is very much smaller than was anticipated at first; therefore the payment should be made upon the actual damage sustained.

498. You mean that the damage would not be assessed till the works are finished?—Or very nearly finished. It does not throw off the assessment till a period of two years, or whatever the period may be, for the completion of the works; but each portion of this would be completed six months after commencing the work of each portion; it would not throw off the compensation for more than eight or nine months.

499. (*Mr. Hunt.*) That is the case now, is not it. You pay a man from the time you take possession?—Yes; but you pay upon the prospective damage. He has not actually experienced his damnge.

500. You would not settle the compensation till the damage is ascertained by the actual fact?—Quite so.

501. (*Sir Joshua Jebb.*) What gradient do you find to be necessary in order to go up to the level of the bridges from the low level?—The smallest gradient of any is 1 in 24; if I recollect rightly, the same as the lower end of Regent Street.

502. (*Mr. Thwaites.*) I understand you propose to make this a self-paying scheme?—Yes.

503. I think from your figures you show an actual profit?—I do; but there are still some points that would be open, so that there might not be an actual profit.

504. You have not given the whole cost?—Yes; and I have unforeseen costs to the extent of 59,000*l.*; but in large works of this kind, when a gentleman comes and says, as has been said here, that the compensation is inappreciable, I should be unwise to say that that is the total cost; I think it would be.

505. You say you estimate 88,635*l.* for property; what is the general description of the property which you propose to purchase?—At Westminster, close to the Bridge, there would be 40 lineal yards of property to be purchased for the approach.

506. Do you mean property now uncovered?—No; it is actually built upon; it is a small building, part of which is the Westminster Bridge Office.

507. (*Mr. Hunt.*) Do you take the public house also?—No; there is a small covered area, consisting partly of stores and partly of the Westminster Bridge Office. Next, at Whitehall, I take 30 lineal yards.

508. What is that?—The entrance from Whitehall Place into the road. The next is at Hungerford, 30 lineal yards; that is a like entrance. Then from Craven Street 30 lineal yards. At Waterloo Bridge 20 lineal yards, which is also a covered place, being at present, I believe, stores at the end of Waterloo Place. Then at Blackfriars Bridge there are 20 yards in a like position required for the approach. At Queenhithe there would be 120 yards of very valuable property, part of the frontage of the wharf, and 130 yards to carry the street on into Queen Street.

509. (*Mr. Thwaites.*) If I understand you rightly, the 88,635*l.* which you put for property in fact is for the purchase of property to carry out the necessary approaches?—Yes.

510. You have made no estimate as to what amount would be required for purchasing the interests of the wharfingers, or for compensation for the inconvenience they might be put to?—Yes; 59,000*l.* I have put for that.

511. That is, as I understand you, the cost for conveniences during the construction of the works, and which you would have to pay for in order to enable them to carry on their business during the construction of the works; but supposing any permanent injury should arise from your structural works, have you included in your estimate any sum for that?—No, because my proposition for eventual compensation leaves that question of permanent injury to be a question of fact, and as a question of fact it would not be a permanent injury, but, on the contrary, it would be a benefit, because it would bring the wharfingers an increased trade.

512. I understand that you would quiet the wharfingers by this assurance, "So soon as my plan "is carried out you will find, that instead of its being "injurious to your property, it will in fact be a great "advantage, and you have only to exercise faith till "my plan is completed, and you will find that that "will be the case"?—I should tell them that, but I should not have the least faith in their believing me, therefore I have put down 59,000*l.* for accommodation works, in order to provide conveniences for them to their satisfaction.

513. Your opinion as to the ultimate result has had an effect upon your estimates so far as to exclude from them any charge for compensation to the wharfingers?—Eventually, excepting the 59,000*l.* for temporary accommodation, and excepting the permanent gift of 30 feet width of new frontage, as I have before stated.

514. The estimate you have given us is for the purchase of land in order to enable you to complete your approaches, for the structural works, and for such temporary accommodation as may be necessary, in order to meet the requirements of the wharfingers during the construction of the works?—Quite so.

515. In fact you have made no estimate as to the probable amount of compensation that would have to be given?—I have made an estimate that it would be nil, after taking into consideration the allowances above stated, and that if a balance sheet were struck, instead of their having to be paid, they would have to pay the Commissioners.

516. You spoke of the formation of a large tunnel, the invert of which should be made use of for the purpose of carrying the sewage; what would be the size of that?—Above 60 square feet in area.

517. What would that be equal to in a round tunnel?—Something like 9 feet diameter.

518. What provision have you made for storm waters in that tunnel? Supposing a heavy storm came on, which would master the capacity of your sewer, it would burst the roadway which you propose to form inside, and probably flood that roadway and

drown the passengers in a not very pleasant fluid?—I think that it would not have that effect. You must first assume that the storm water is such that 60 feet of area will not carry it off. When I was unwise enough to send in plans to the Drainage Commissioners in 1849, for which I got only thanks, if I remember rightly about 50 feet was the area which the storm waters of the north side then required. My impression is that since that time the storm waters have, if I rightly understand, been carried off to a certain extent by high level sewers, and the remaining storm waters, therefore, cannot be such as to occupy the total area of 50 square feet; but if that be so, if it would not only occupy 50 feet, but say even 500 square feet in being carried off, I have made no provision other than the subway for the sewer there, because I see in the evidence of Mr. Bazalgette and other engineers before the Thames Embankment Committee of last year no provision other than their sewer which I can detect. If they have contemplated any provision other than what they proposed in that evidence before the Thames Embankment Committee, that provision may be made here, but I have seen no other provision.

519. Supposing we should have a fall of 1½ inches in two hours upon our paved streets, most of which finds its way into the sewer, in what condition would that sewer be in such a case?— The 60 feet is as much and a great deal more than Mr. Bazalgette has provided. If he has provided more it is in some concealed shape which his evidence does not show. But if the storm water were an immeasurable quantity, a huge torrent coming down(as I have seen a tunnel completely blocked up from a water spout), suppose it were that huge quantity, Mr. Bazalgette I presume will provide for it; and I have said that the direction of this sewage matter ought to be left to the discretion of the engineer of the sewers. He knows best what he wants; and in so far the Thames Embankment is a handmaiden to the Sewage Commission. If the engineer of that commission is to provide for an extraordinary quantity of storm water, he would reasonably, I presume, come to the engineer of this construction, and say, "I want such a surplus provided for storm water." I do not see the least difficulty in throwing that storm water upon the channel of the roadway and providing sufficient sub-channels under the roadway, in order to carry it off into the river, without going into the sub-sewer at all.

520. (*Captain Burstal.*) You stated just now that the extent to which you had drawn your line of embankment was similar to that laid down by Mr. Walker?— I think so.

521. I think you are right as far as Hungerford Bridge, but I think between Hungerford Bridge and Waterloo Bridge you deviate from him very considerably, if your description is a correct one; you take in 1¼ of the arch on the Middlesex side of Waterloo Bridge?— Yes.

522. You come nearly to Hungerford a little outside of Mr. Walker, but there you deviate from him. He embraces the first arch of Waterloo Bridge, and then he takes the first of Blackfriars Bridge, consequently you will project very considerably further into the river off Somerset House and off Temple Gardens?— Quite so.

523. Do you apprehend that by bringing your line of embankment so far into what is at present the deepest water of the river there would be any considerable accession to the rate of the current?—I do not think there would be any considerable accession to the rate of the current, because there is something like 200,000 or 300,000 cubic yards of filling in this project, and that is estimated to by far the greatest extent to come out of the dredging of the river, therefore the cubical contents of the river would be increased in proportion to its surface extent beyond what it is now; but the current, no doubt, will be to a small extent increased; it will be probably nearly as fast at Hungerford when this work is completed as it is now a little to the west of Blackfriars.

524. Where do you propose to take the material from for filling up?—There is a length of 2,500 lineal yards from the west end of Temple Gardens to about 1,100 yards above Westminster Bridge nearly opposite Lambeth Church; that may be dredged with advantage.

525. On the Surrey side?—Not strictly either on the Surrey side or the Westminster side; it lies in banks here and there.

526. With regard to the banks most conspicuous above and below Waterloo Bridge, would you remove those banks?—I should remove every bank which could be removed without any danger to any existing structure round it.

527. What is the greatest depth you could go to below, Trinity high-water mark in order to get material that would compensate for the loss which the river would sustain by the intrusion of the embankment?—My estimate is that I might go 9 feet below the surface of each particular bank.

528. In compensating do you believe that if you dredged below the present level of low-water mark or 19 feet below Trinity high-water mark it would compensate for the water excluded?—I think if we shut out the water by embankment, and made a hole in the river to admit water, in so far it would allow to a great extent for compensation.

529. What I mean is this; supposing it were possible to put a huge board out 20 feet below Trinity high-water mark, and you dredged a large hole below that board, that would not go towards compensation?—No; it would not. I mean I go 9 feet below the surface of a particular bank.

530. After the works are finished and the new warehouses are built, how do you propose to accommodate the wharfingers carrying on their traffic?—The present wharfingers would be accommodated in this way:—The trade would change its character. At present the boats lie alongside the warehouses or nearly alongside the warehouses. There are sometimes four boats' lengths extending into the river, and they carry their goods across the boats, which are then hoisted by a crane to their warehouses. Instead of having four boats' lengths, the wharves themselves would extend, we will say, to those four boats' lengths. The trade would then be divided into three branches; that which they wanted to unload, and deposit for subsequent carrying away by carts, they would unload upon the 30 feet next the river; that which they wanted to take into the warehouses would be carried across the roadway; but I believe it would eventually be carried by cranes up to the high level, and then by stages across into the warehouses.

531. It would be hoisted by cranes direct from the barges into the warehouses?—Yes; and then the third class of trade would be that which after having been deposited in the warehouses would be sent away by road or river afterwards, which if sent away by the river would come from the upper level, and so on to the barges, or if it were sent by road would have a road at the back as well as a road in front. And hence it was that I said in answer to a question put to me just now by one of the Commissioners, that unquestionably the wharfingers would have increased accommodation and the trade would have increased value.

532. (*Mr. Hunt.*) They would carry their loads across the road, would they?—No. The coals would, probably, to such an extent as the wharfage would not give. They would be deposited upon the wharf contiguous to the river. If the coals were carried away immediately they would be carried away by the roadway. But if more coals came in than the front wharf could take, they would first carry them across the roadway, but eventually upon raised stages into the back yards.

533. Would it not be inconvenient to the barges to have to lie alongside your embankment in the current of the stream?—No. If you observe, between

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Southwark and London bridges the barges are lying outside every day. I have observed something like 30 or 40 between Southwark Bridge and London Bridge, which is the narrowest part of the river, and the sharpest run of the stream, and unquestionably whatever barges were lying outside, in the plan I propose would have a better accommodation than those barges have.

The Witness withdrew.

Mr. W. A. Brooks.

Mr. William Alexander Brooks, further examined.

534. (*Chairman.*) Do you wish to add anything to your former evidence?—Mr. M'Clean put a question to me as to the discharge of the flood waters. I explained that they would be brought over the line of railway—I omitted to state, that they would be discharged at about the level of low-water spring tides, immediately above the timber framing. I should also have stated that means would be taken to carry off the water that would otherwise fall into the tunnel. I also beg to hand in a specimen of the stone upon which my estimate of 155,000*l.* was founded for forming the quays between Westminster and Queenhithe.

535. (*Mr. Thwaites*) That is the facing?—Yes; my estimate would not be for polished stone like that.

536. (*Mr. Hunt.*) How much a cube foot would that be not polished?—2*s.* 6*d.* to 2*s.* 10*d.* for the smaller stones—for the large ones it would cost more, about 3*s.* 6*d.*

Mr. H. Jackson.

Mr. Henry Jackson examined.

537. (*Chairman.*) Will you explain your plan to the Commissioners, commencing from Westminster Bridge, and describing it as far as you go?—My plan commences at Chelsea, in its general outline. It is one and the same thing as taking it in part; but we have more fully developed the part taken from London to Westminster than the other portion of it. Beginning at Westminster, the intention is to continue a line of railway to London Bridge, with the low level sewer, as shown by the section here, in a tunnel 18 feet by 22. The section is 32 feet. It is a narrow gauge double line, being four feet above Trinity high-water mark. There would be locks at various intervals for the accommodation of barges, by tidal entrances, as shown here and there, and as shown by the longitudinal section. With regard to the amount of dock room, I think it would be somewhere about 14 acres. There would be nearly the same quantity of recovered land, which would be at Privy Gardens, Hungerford, Somerset House, and the Temple, which we deem to be the most important points, and the rest would be water-way, one continuous high-water level, whereby the trade might be facilitated and carried on at all times of the day.

538. If I understand you rightly, you propose to build up a wall in the river. How wide would it be, including the sewer?—45 feet on the average.

539. You propose to build up a wall in the river, leaving a margin of water between that and the existing shore, varying in breadth from 60 feet to 200 feet?—Yes.

540. With entrances through the wall, and lock gates, so as to keep the water in that which I have called the margin of water always at the level of high-water?—Decidedly.

541. With locks at various distances?—Yes.

542. Within that wall you would have a tunnel for the sewage waters, and upon the top of that a railway?—Yes.

543. You do not include in your scheme an ordinary road?—I do not.

544. Then I am afraid I must say that your plan hardly comes within the category of those which we can usefully look at, for our instructions are to examine plans, and to report upon the plan that will best provide for relieving the streets by "a spacious thoroughfare"?—We look upon it that by this plan the relief of the passenger traffic would be most efficient; it would take the omnibuses and heavy vehicles off the Strand. This plan was drawn in 1858, and we have not received the recent instructions.

The witness withdrew.

Mr. W. Austin.

Mr. William Austin examined.

545. (*Chairman.*) Are you a civil engineer?—I am, but not a member of the institute.

546. Am I right in supposing that your plan is similar to the last in principle, in respect of its not providing a roadway?—It provides a roadway, but not a railway.

547. How wide is the roadway?—30 feet. The 30 feet plan can be easily extended. This plan is as modelled in a large model for which Mr. Roupell paid 2,000 guineas, and which he presented to the South Kensington Museum, which details the whole of this line, all these spaces being filled in by wharves, which are detailed by these sections, or filled in as solid ground, according to the wishes of the owner of frontage, who would have to pay for whatever was made new ground or new wharf. My plan consists in the formation of a roadway, and a protection against the overflow of the Thames, and a conduit on either side for removing the sewage. I have not calculated upon a railway. I consider that there are so many interruptions which would be caused by a railway that it would be highly detrimental to the merchants on either side, unless the railway could be carried at such a height that barges could go under without striking their masts. I have had a great deal to do with barge owners, and I know the difficulties they have to contend with. I have been engaged in large works all over the country, and I have lately completed some at the Portsmouth Dockyard; the great dock into which the "Warrior" is going. In submitting these plans I may say that they are entirely original. I believe I am original in this plan of forming arches continuously to resist the thrust. This is the vertical plan of walling (*exhibiting the same.*) Here are the sections of it. They come down and strike on the arch of the conduit. It is impossible that such a wall could collapse. The whole of this being filled in with concrete forms a resisting mass of masonry. I have flood-gates which are only to be permitted to be open an hour before and an hour after flood-tide, and on no account are the gates to be open later than an hour after flood-tide. Some winds will prevail which will keep the flood on longer; that is why I say an hour after flood. These are the sections of the rings I propose making (*producing the same*).

548. (*Chairman.*) Before we go into details, will you give a general idea of the whole of your scheme? You propose to build two walls, each of them 30 feet thick?—30 feet is the minimum.

549. Leaving the distance between these walls and the shore in which the water would be as it is now?—Yes.

550. And in order to get the use of that water for the barge traffic you would have, not locks, but flood-gates?—I would have flood-gates.

551. Those would be open an hour before high-water, and kept open till an hour after high-water?—If there were any necessity for it, but they ought to be shut at the turn of the tide.

552. You would give the barges the opportunity of *two* hours every tide?—Yes; nominally only *one*; but it should be permissible to give them *two* hours.

553. That is the utmost latitude you could allow?—Yes.

554. Then it comes to this,—there would be a margin of water all the way along the present shore, and at a distance of from 100 to 200 or 300 feet from the shore you would have this wall, having the low level sewer in the wall, and having a roadway on the top of it?—Yes.

555. Supposing the 30 feet which I speak of not to be at all adequate to giving a spacious thoroughfare, I suppose you would have no difficulty in making your roadway 50 or 60 feet?—We could double it.

556. With regard to the peculiar construction of your wall, if it were made 50 or 60 feet wide instead of 30 feet, filling it with solid earth would be sufficient to make it substantial without your arrangement of hollow cylinders?—Yes.

557. Then the main principle of your scheme is that you build walls on both sides, narrowing the stream to somewhere about 700 or 800 feet all the way along, leaving the water between the walls and the shore for the barges and other water traffic?—It is, above London Bridge. Below London Bridge the space of centre water way or mid stream would spread or be extended to requirements.

558. The wall is brought to such a level above high water as will make it always safe against the highest tide?—It is eight feet above the highest known tide; eight feet to the top above the highest known tide that ever flowed in the Thames.

559. Have you provided any communications between the top of that wall and the various streets that run down to the water's edge?—Yes. I have not my large model here, or that would show it all perfected.

560. We may take it that these walls have short streets or roadways communicating with the existing streets?—Yes. Instead of each merchant having his own entrance, at least a dozen merchants should have one entrance, which would be open at the top of the tide, and all must avail themselves of it to take in or out; but at the same time it gives an opportunity of changing all the foul water which has accumulated there for 24 hours, which is ejected by the incoming tide, and which becomes a fresh charge of water. My plan is one that does not require a sixpence to be laid out in the purchase of rights of way, because it touches no man's right. It begins boldly in the river, and whatever is laid out should become at once the property of the Crown representatives, and they should re-let it, giving the parties who preferred it the right to purchase their wharf space or ground space. Some might prefer to have it as ground space, instead of wharf.

561. (*Captain Galton.*) Do those lock gates have bridges over them for the road traffic?—Yes; and they would swing; the bridges would swing open.

562. So that when they are open, no one could pass along the road?—Yes, unless the bridges were doubled or duplicated in each entrance way. *Mr. W. Austin.* 6 May 1861.

563. People arriving at the locks would have to wait for an hour or two hours?—No. There would be a stipulation that the barges would be alongside, and a certain number would be allowed to pass, and the public then could pass again. It might be obviated if you could compel every vessel to strike her mast; but you cannot do so; the billy-boys and vessels of that class would be greatly inconvenienced by having to strike their masts. This plan is merely a small portion of a continuous whole. My work is supposed to begin at Fulham and extend to the Nore, when thoroughly completed.

PROJECTED PLANS for EMBANKMENT of the River THAMES by WILLIAM AUSTIN, C. E., Southsea.

The general objects and intentions are as follows;—

1st—The prevention of *overflow* of the high tides of the Thames, by construction of *embank walls*, with roadway at the top of each, extending from Fulham to Sea Reach on both sides of the river.

2nd—The collection of general sewer discharges from each side of the river into *conduit tunnels*, forming the footings or bases of the *embankment walls*, and the final ejectment of the sewage beyond the range of return stream or backflow.

3rd—By the construction of these embank walls *at regulated distances*, the river stream would be limited to a *sufficient width* of passage; an increased scour, and a less deposit or precipitate of filth in the river bed, would result.

4th—The construction of *wharf bays* or *inlet ponds* for commercial purposes and general uses within or behind the range of proposed embank walls; by which arrangement the present obstructions of *barges laying in the river* would be removed.

5th—The access to these bays or ponds can be obtained by having flood gates, with roadway bridgings or crossings in *double or duplicated* order, so that no interruption to the public traffic or general throughfare of embank roads would occur. These roads can be constructed from 30 to 60 feet in width *throughout*, varying with requirements.

6th—These extensive propositions involve a large outlay, but the returns are large, and with good management would be highly remunerative, there being at least *one hundred thousand acres of foreshore reclaimable* for good purposes, instead of being now useless, and only producing ague and fever.

7th—It is respectfully submitted that whatever plan is selected, as *the best for the general benefit*, it should be considered *necessary and imperative* that the execution of any portion required *immediate* should form an available *jointing* or *connection at each end*, for the further extension of walls, tunnels, roads, &c. &c.

The witness withdrew.

Mr. JOHN F. STANFORD, examined.

Mr. Yonge stated that Mr. Stanford being deaf, he would state his scheme for him. *Mr. J. F. Stanford.*

564. (*Chairman.*) Is Mr. Stanford a civil engineer?—(*Mr. Yonge.*) Yes. The statement which he has already submitted to the Commissioners states that his plans were formed twenty years ago, in connection with a contemplated company or association, at the head of which were the Dukes of Rutland and Grafton and some others. That scheme was abandoned, but the details of the plan are quite applicable to the present purpose, especially that portion connected with the north side of the river. His intention seems to have been to have commenced somewhat to the westward of the Penitentiary. He contemplated carrying out an embankment extending from that point to the neighbourhood of Queenhithe. Upon that embankment there will be formed, first, a dock nearest the shore; then comes a wharf-way extending 15 feet; then a space for a railway of 22 feet; then a carriage-way of 24 feet; and then a promenade of 20 feet. Those, with the intervening railings and abutments, and so on, will occupy a space altogether of 83 feet 5 inches. Both the carriage-ways and both the foot-ways will have communications

Mr. J. F. Stanford.

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with the shore at all the bridges; but it is recommended that the approach to the carriage-way and promenade be on one side of the bridges, and to the railway on the other side, being more calculated to preserve order and security. The railway would go from Blackfriars Bridge to Westminster Bridge. A communication for landing passengers is provided at each of the intermediate bridges, namely, Waterloo Bridge and Hungerford Bridge; the railway is proposed to be continued to Paul's Wharf. He contemplates that the railway carriages should be constructed with the bodies near to the ground, to avoid the bridges, and propelled by stationary engines at the ends of the lines, to avoid the inconveniences arising from locomotives. The sewer in connexion with the embankment he presumes will commence somewhere about Scotland Yard, in connection with the main drainage scheme, and that it will be brought from about Cremorne Gardens, along by the north bank of the Thames, south of Chelsea Hospital, into the fields, until it bisects the junction of the road from Lower Sloane Street to the new Chelsea Bridge with the Commercial Road, and so through St. James's Park to Scotland Yard. He has given me also the smaller details. I think that that gives a general idea of the scheme. He has roughly calculated the expense at 750,000*l.* I am not furnished with the details of expense, but it is understood that if the plans are more fully gone into an opportunity will be given for furnishing further details.

565. (*Chairman.*) The main principle of the scheme is that it is a solid embankment about 80 feet wide, built up in the river, leaving the water space between the existing shore and it, and having on its surface a railway and a carriage-way on the same level?

Mr. Yonge.—Yes.

566. (*Chairman.*) The railway carriages running side by side with the ordinary traffic, but with no locomotives running?

Mr. Yonge.—No locomotives.

567. (*Chairman.*) The means of getting into the water which is left between this embankment wall and the existing shore would be by locks?

Mr. Yonge.—By locks at certain intervals.

568. (*Chairman.*) The embankment is only just high enough above high-water mark, to prevent the highest tide from running over it?

Mr. Yonge.—Yes.

569. (*Chairman.*) The locks would necessarily when they are open stop the traffic both of the railway and of the carriage-way?

Mr. Stanford.—Iron bridges would be constructed over what might be termed the lock entrance, so as not to obstruct the boats in going in at the time that the water is somewhat lower than high water, and not to interfere with the level of the railway or the carriage-way.

570. (*Chairman.*) Would the bridges have approaches to them, so that they might always remain fixed, or would the bridges be moveable?—The bridges would be fixed; there would be approaches to them from the shore by what are called wharfways; they may or may not have lock gates; that would be determined by the Commission. I have consulted the wharfingers as to their opinion of the convenience of having closed locks.

571. You are speaking of bridges from the shore to the proposed embankment?—Yes.

572. As in the proposed embankment there would be lines of traffic, and as there would be lock entrances from the river into the margin of water, there must necessarily be bridges over those locks?—Yes.

573. What sort of bridges would they be?—Cast-iron beam bridges; fixed bridges.

574. You would have it rise from the level of your embankment to get over the bridge?—No.

575. How do you get headway for your barges under the bridges?—There would be as much as five feet or six feet.

The witness withdrew.

To the Honourable the Commissioners for the Embankment of the River Thames. This Addendum to the Memorial of John Fordham Stanford, relative to his Plan for embanking the River Thames, respectfully showeth,—

That on Monday last, the 6th instant, your memorialist, being examined respecting his plan for embanking the River Thames, in consequence of a statement made by the honourable Chairman of said Commission, "that on certain vessels on said river, termed 'billy boys,' the masts could not be lowered so as to pass into the proposed docks, and that the owners and masters of such vessels would not allow them to be altered for that purpose," the examination of memorialist was stopped. That your memorialist has since made inquiry at the wharf at the south end of Millbank, late in the occupation of Alderman Johnson and of others, whether the masts on such vessels could be lowered; he was informed that the masts of all such vessels were lowered at all needful times in passing under the bridges of that river; and that any statement to the contrary was untrue.

That your memorialist, having reconsidered the matter of terminating the railway proposed to be formed on such embankment, and that it should terminate at Westminster Bridge, and that the proposed continuation of such railway should pass by way of Victoria Street to the Pimlico Station, perceives very material objections to such plan, that such continuation must necessarily cross Bridge Street and Parliament Street, in both of which there is a large traffic, and that in crossing the latter street the members of both Lords and Commons are liable to be seriously impeded in their passages to or from Parliament by the railway carriages, and to be exposed to danger—and the same objections arise in regard to the congregations of Westminster Abbey and St. Margaret's Church—and that Victoria Street, when finished, will most probably become a place of great traffic, and that a railway down that street will become a serious inconvenience. Your memorialist, therefore, proposes to continue the embankment with the railway to Millbank, a little beyond the wharf before mentioned and late in the occupation of Mr. Alderman Johnson, and that the branch line from thence pass by the north or north-east side of the Penitentiary prison, thence across Regent Street and Vincent Square, across Rochester Row, to the east side of the Crescent at the north or north-east end of the Vauxhall Bridge Road, across such road and through such Crescent (at a convenient point) into the Victoria or Pimlico Station; that in the course of such line there is no considerable amount of traffic; the use of Vincent Square by the Westminster scholars is likely soon to be discontinued, as a school for them is about to be provided in the country; and further, that there is not any expensive property on that line, and which, for a London communication, affords unusual facilities at little expense; that the embankment, with the railway, be constructed as high as may be convenient to pass under the several bridges by which it will pass, and that it have a slight stoop or slope downwards to clear the arch of Westminster Bridge, and a gradual rise to Millbank; and that the promenade at such bridge be reduced to ten feet in width, to give facility for the railway, and that it be gradually widened when the bridge is passed to fifteen feet, and so continued to Millbank.

That your Commission be pleased to decide whether, after the lower level sewers are constructed, and all the sewers and drains thereby intercepted, and the filth therefrom prevented passing into the river, it be necessary to have gates to the docks, as they are more likely to be obstructions than useful in such docks. As it will be observed that there must at all times, on the passing out of a barge or other trading vessel from the dock, be a depth of four feet of water or thereabouts at the outside of the dock entrance, and from five to six feet at the same point

on the entrance of trading vessels into the dock, and that thereby one-third of the time in the rising and falling of the tide, the vessels will, under any circumstances, be unable to pass into the docks. That gates to such docks are not approved by the wharfingers, so they have expressed themselves to memorialist; and that, therefore, the expense and inconvenience attending the opening and closing such gates and sluices will become a serious loss. That with regard to the sanitary state of the foreshores within the proposed docks, your memorialist respectfully begs to propose that spacious tanks be constructed within the embankment next the docks, and in the wharf ways between or at the ends of such docks, to be supplied at high water through an iron pipe of sufficient size, viz., 6 inches diameter, with a valve at the inner end similar to those at the ends of drains which pass into the sewers, and that preparation be made at each tank for attaching a hose thereto, whereby the docks may be sluiced and washed.

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Similar tanks may be made, where necessary, under the wharfs, and the southern or Surrey side of the river (if the intercepting process be successful) need not be embanked at all. And, therefore, by omitting the dock gates and sluices and the embankment of the south side of the river, one-third of the expense will be avoided and the estimated cost thereby reduced to 500,000*l*.

Mr. James Edmeston examined.

Mr. J. Edmeston.

576. (*Chairman.*) Will you describe the main features of your plan?—The plan is the same as that which I had the honour to lay before the Committee of the House of Commons. As regards the plan itself, this Ordnance sheet will show over what ground it is proposed to pass, the main feature of the scheme being rather dependent upon the peculiarity of the cross section than upon anything which has to do with the plan. The points which I have had in view are, in the first place, to preserve the river front for the warehouses, so as to interfere as little as possible with existing interests; secondly, to reduce the cost to the smallest possible limit; and, lastly, to provide for the sewer, and effectually relieve the streets of traffic. This is proposed to be done by a roadway and railway, which is intended to begin at Westminster Bridge, the roadway going by the river wall as far as Southwark Bridge, and then from there constructed upon piles with wide openings, and the railway terminating at Southwark Bridge, unless it were continued by a tunnel as far as the Blackwall Station. The roadway and the railway in all are 55 feet wide, 35 feet for the road, and two pathways, 10 feet each, projecting over, for the purpose of going as little as possible into the river. I was observing, that little depends upon the plan, for this reason,—the whole intention is to keep as close as possible to the river side, excepting where the river is very wide, in that wide part in the neighbourhood of Hungerford Bridge,—that is an exceptional part, but for many reasons the proposal is to keep as close as possible to the river side. In the entire scheme anything like docks or tidal basins is altogether avoided, as from all that I inquired and can learn upon the subject, both before last summer and since, I am convinced that any scheme which takes the great highway from important interests, namely, the docks and warehouses along the river-side, will be found to be fallacious, and claims for compensation will be founded and established if those interests are interfered with. The way in which the owners of the warehouses are dealt with is this:—At the part opposite any particular warehouse there will be an opening through to the warehouse, and a platform would pass from the ground floor to the shore side of the embankment under the roadway. Of course where it passes under the roadway it would be a covered place; the platform might be also covered where it passes over the railway. What I propose is, in fact, to extend the ground-floors of the warehouses about 70 feet into the river and to the edge of the embankment. That species of construction I should consider would do very well as far as Blackfriars Bridge, but beyond there, probably, it would be more desirable to widen the recesses in the way shown upon that sketch, so as to adopt a different system, to put the piers further apart, to allow more barges to approach this platform. This (*pointing to the section*) being the level of the wharf or warehouse, there would be a platform here. There would be a crane above, and they would get this platform added at the level of their ground floor. I think it objectionable to go very far into the river, because, among other reasons, if you go too far the barges would be knocked about by the current. I do not think that at this distance that objection arises, nor would the traffic of the river be interrupted, therefore the barges would lie here and unload here. The goods would have to be landed on to quay, and from thence they would have to be hoisted up to the different floors; that undoubtedly they must do, but that is almost all the difficulty which they would encounter. Then another reason why I keep so near to the side is to avoid the cost of construction. The whole of this would be somewhat within low-water level, and anybody who has examined the sections of the bed of the river must be aware that to go out a great distance, which has been in some cases proposed, would be a difficult undertaking. I think that keeping close in reduces the matter to the smallest possible limit. This sketch shows the river opposite the Temple. This section shows the same thing. There might be an arcade here or in other places. Those places would be landing places; but where the traffic requires it there might be those wide openings which might suit the frontages of different properties, and you might easily arrange the construction in that way or partly in that way. With regard to the railway, the railway is, as seen here, at that level a few feet above, the low-water level, the scheme providing for two lines of railway, and for a third line of railway, which is intended to be solely for the use of the tenants of the warehouses. That third line is intended to be a place at which vans might lie all day, and goods be received, and loaded and unloaded, and sent away at night, in various directions, as convenience might require. The sewer would pass either through the river wall or beneath the railway. This construction would almost provide for the sewer. A little addition would do all that would be required.

577. The railway being between the river wall and the existing shore at a much lower level than the great road for the ordinary traffic?—Much lower than the road, and just low enough beneath the platform to allow engines to pass. It would be about the height of headway of the Blackwall Railway. The total projection into the river is about 70 feet.

578. If I understand your plan it is this:—You would build a solid embankment of 35 feet wide at distances from the existing shore varying from 40 feet up to probably 100 feet?—No; I do not intend in any case to go beyond 70 feet. The object would be to keep the third line of rails as close as possible along the fronts of the warehouses, so as to disturb as little as possible the existing order of things.

579. Then the communication which the wharfingers would have between the warehouses and the river would be by a bridge leading over the railway on to the great embankment; and at the outer edge of that embankment the barges would lie, and land their goods?—Yes.

580. Over that, and at a higher level, the great road would be carried?—Yes.

581. And the road would be generally upon the solid embankment, except at places where the wharfingers would require an opening?—Yes; and

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there would be lattice girders, or some construction of that kind, so as to get a span of 60 or 70 feet, where the wider landing-places were desirable.

582. You suggest then that there should be a roadway 35 feet wide, and that there should be a footpath on each side supported on cantalivers ?—Yes.

583. So that your embankment would be at the top 35 feet wide, and, including the projecting galleries supported on cantalivers, probably 50 feet wide ?—Yes.

584. And somewhere, at such a level as would be found proper, you provide for laying the low level sewer ?—Yes. I obtained at the time I laid down this plan the particulars of the level of the low level sewer.

585. I presume that there would be no difficulty in giving communication with your roadway from the existing streets ?—Certainly not.

586. If it were thought that 35 feet was not wide enough for the great roadway it would involve making your embankment so much wider ?—Yes ; it was solely with me a question of expense, to keep the whole thing as simple as possible.

587. You encroach as little as possible on the river ?—Yes.

588. I observe from Southwark Bridge to London Bridge in your plan a blue line, which I presume indicates the outer edge of your embankment, extending into the river some considerable distance between Southwark Bridge and London Bridge ?—No ; the blue line is not intended to show the embankment at all. The embankment may cease at Southwark Bridge ; but if the road is carried to London Bridge it should be on piles raised above the water level, and connected by a series of bridges with the pile foundation, because not only are the difficulties of constructing the embankment greater above Southwark Bridge, but also the property there would be more materially injured by the embankment than the property on the west of it.

589. With regard to your railway, what depth would that be below the level of the existing warehouse floors ?—About 12 feet.

590. Would that involve underpinning the warehouse walls ?—In some cases it would.

591. Would there be any difficulty in ensuring that the railway should always be dry ?—I think not, if carefully constructed.

592. Your estimate, exclusive of the railway, is 450,000*l.* ; that is for the construction of the works ?—Yes.

593. To that must be added the cost of the railway, and also whatever compensation would have to be made ?—That is the cost of laying down the rails and providing stations ; and my notion is, that if this bed, ready to receive the railway, were made, it would have a considerable value ; it would be readily sold or let at a rental, and would be valuable property. I think that a company might very easily be found to take it, and to pay for it. Therefore you would have that to set off against what might be expended in the shape of compensation. The whole intention through the whole matter has been (and there were many consultations with the owners of river side property at the time) to reduce the question of compensation to the smallest possible limit. In some cases, no doubt, what is proposed would do no harm at all ; in some cases, indeed, it might be a benefit ; but some would have their conditions of trade changed, and those would have to be compensated ; but the whole intention was to keep everything as it is at present existing as nearly as possible, and at the same time to achieve the main ends in view.

594. Your work is at Westminster Bridge much less in projection than the existing line of embankment at the Houses of Parliament. You do not go so far out into the stream as the embankment of the Houses of Parliament ?—Not so far as is shown upon that plan.

595. Has it occurred to you that there would be any engineering difficulty in getting a foundation and constructing the low level sewer so close to the edge of the existing shore ?—No, I think not. I think that the sewer would more properly go as shown upon this section through this embankment.

596. Have you placed that at the level which would be the right level ?—Yes, as near as I could ascertain, and I believe correctly so.

597. Should you consider it necessary to dredge or excavate below that level for the foundation of your embankment ?—To some extent below the bed of the river.

598. Are you aware of the nature of the strata ?—I am not positively aware ; it is very various. I know that in some places it is hard, and I know that in others it is soft.

599. (*Sir Joshua Jebb.*) Are you aware of the quicksand near the bank of the river ?—No.

600. (*Captain Galton.*) Is the railway to communicate with the existing railways ?—It was intended to communicate with the Blackwall Railway, and all those now crossing the river.

601. How would it communicate with the one at Hungerford Bridge ?—There would be a branch or connexion of some sort.

602. Your railway is rather at a low level for that, is not it ?—I suppose it would be. It would not communicate on a level with either one or the other.

603. (*Captain Burstal.*) What is your object in having such a narrow line of embankment ?—The object is simply to save expense ; the further out you go the more injury you cause to the river side property, and to have a needless width is so much more material put into the river.

604. Do you propose to leave a space outside the embankment for vessels to lie in ?—They would lie outside, and I propose to recess the embankment in certain places, leaving only sufficient strength in the river wall for the convenience of lying in.

605. All craft would unload outside the embankment, and they would carry goods across that bridge to the warehouses ?—Yes ; except where the wall was recessed for the purpose of allowing greater convenience of that sort.

606. Do you consider that there is room for this main road and for the railway under one arch of Waterloo Bridge ?—It would pass under all the bridges, except Blackfriars Bridge, and there an alteration must be made in the last arch.

The witness withdrew.

Mr. G. P. Bidder.

Mr. George Parker Bidder, examined.

607. (*Chairman.*) Will you shortly explain the general outline and characteristics of your plan ?—It is some twelve months since that plan was made, which I prepared for the consideration of the Committee of the House of Commons appointed last year; and if you will permit me, I would rather refer to my evidence before the Thames Embankment Committee, at question 1103, where I go into the plan in great detail ; as in fact a great deal of the detail has gone out of my mind since then. The general object was to form a wide spacious roadway from Westminster Bridge to Southwark Bridge, utilizing the land with the view of repaying part of the outlay, also by constructing the docks to neutralize the claims for damage to wharfingers, and to utilize the road so far as the traffic admitted by bringing it on the level of the existing bridges, so as to communicate with all the important cross thoroughfares, and to form communications with Norfolk Street, Cecil Street, Whitehall, and Whitehall Place, so as to relieve the Strand of traffic upon it, and enable it to follow the proposed new road to the city, and also to facilitate the formation of the low level sewer, which otherwise would have to be carried down

through the leading thoroughfares, entailing upon some party or parties an amount of loss which would be scarcely estimable. Since then the Commission are aware that Parliament has sanctioned the construction of a railway parallel to Blackfriars Bridge, nearly upon the same level. I believe that there is a clause introduced into that bill by which the levels of that railway may be varied to the extent of 10 feet. I doubt whether that will enable the road as proposed by this plan to cross Blackfriars Bridge upon a level; I believe it to be almost impossible. Then if you come below the level of Blackfriars Bridge, so as to pass underneath the railway, that would prevent accommodation being given to the wharves, and would increase the compensation to be paid to the wharfingers, and enhance the cost of extending the roadway to Southwark Bridge. The main point upon my mind is in what way and under what circumstances this great work should be carried out. I believe if it is to be done economically and speedily it must be carried out either by a few individuals or by an association of individuals, who should come under proper covenants, subject to very strict supervision, to ensure that all the objects contemplated are effected, and that the works are done in a substantial and permanent manner. My experience teaches me that these things cannot be done so economically or so rapidly as where they are carried out by individuals who have their own profit at stake in them. Of course it would be necessary to have a proper body to supervise the work ; and it would be necessary, unless you swamp the thing with a prodigious amount of law costs and contested claims, that some special legislation should be applied to it, with the view of having those claims adjusted equitably, and at the same time by some process less cumbrous and costly than the ordinary Lands Clauses Consolidation Act provides.

608. The main features of your scheme consist of a broad embankment carried out to a distance from the existing shore, having in many cases docks?—Yes.

609. Amounting in the aggregate to about 12 acres?—Yes.

610. You would have four docks in all, those docks being approached by regular locks?—Yes.

611. Within the roadway of the embankment and the existing shore you would have an additional breadth of ground to be applied to the building of warehouses?—Yes.

612. With a view to get something in aid of the carrying out of the works?—Yes.

613. You do not contemplate a railway on the north side of the river?—No. I did contemplate omnibus tramways.

614. On the surface of the road?—Yes.

615. Running side by side with the ordinary traffic?—Yes.

616. You would get on to that embankment at Westminster Bridge, and you would ultimately leave it at Southwark Bridge, there being the means of communicating at several pther places?—Yes.

617. In that embankment you would get the low level sewer?—Yes.

618. You made this plan some time ago. At that time there was a good deal said about the deposit of mud within the docks. Are you still of opinion that it would be easy to keep those docks clear?—"Easy" is a term to which you and I may attach very different meanings. If you mean easy compared with a very large expenditure, I should say that it is easy ; but I admit that it would be a source of considerable expenditure.

619. I forget how you get over the entrances to the docks, and how the ordinary traffic is carried over?—There is a sufficient elevation to get ordinary barges and vessels which lower their masts through.

620. (*Captain Galton.*) Are the figures marked on that map the widths of the river which you consider are sufficient for the tidal flow?—Yes. The bottom would be deepened. You would have the same sectional area as you now have.

621. You propose to execute the works by means of a company?—Yes.

622. Would the sale of the land, do you think, recompense the company for the cost?—To some extent.

623. How would the rest have to be met?—I imagine that if you go on to Southwark Bridge, the alterations which would be required to meet the construction of the London, Chatham, and Dover Railway would entail an extra cost upon this work of a quarter of a million of money, in additional compensation ; that is a mere guess, but I think it would come very near that. The feeling that I have, and I have consulted some people who are very good judges, is this,—that if the company or the individuals carrying out the work had the clauses to which I refer in my evidence, giving the means of adjusting compensation on those terms, and if they had the privileges of reselling the land for the purposes of other warehouses, and they had also the profits of the tramway, which probably ought to be thrown open, the cost to them would be somewhere about 500,000*l.*

624. Their profits would be derived from the sale of land, from the receipts of the tramway, and from the letting of the warehouses?—Yes.

625. Would the road itself be open to the public?—Yes ; all but the tramway.

626. Do you think that you provide a sufficient thoroughfare for relieving the traffic of the city if you take the road to Southwark Bridge, and there end it?—Yes; it would be a good wide street, with the exception that Walbrook should be widened; in that case there would be from Southwark Bridge to Cornhill a spacious street, with the exception of that gorge leading up to the Mansion House, which neutralizes the use of Cannon Street as it now exists.

627. Unless that is widened it would not relieve that part of the London traffic?—No.

628. Near Southwark Bridge you would have to purchase property?—We should have to compensate.

629. (*Mr. Thwaites.*) You spoke of a cumbersome machinery. Will you explain to the Commission what you mean by a cumbersome machinery?—I will take your machinery, the Metropolitan Board of Works, which is a popularly constituted body. I cannot go into particulars; but I should say that it is not a good machinery for carrying out the works, either expeditiously or economically, where they would have to adjust such claims as would arise here. I do not mean that the Metropolitan Board of Works may not be a proper body to make a contract, but to carry it out in detail their constitution would not insure its being done cheaply or quickly.

630. You spoke of certain powers to be obtained from Parliament to enable any body to carry this out with economy?—Yes.

631. Supposing that the cumbersome body had the power in question, do you think that there would be any difficulty in carrying out the work?—There would be no difficulty ; only they would not do it. I do not think that a body constituted as they are, with no individual liability or responsibility, are a body calculated to carry out the work either cheaply or expeditiously, and there are various other reasons which lead me to that conclusion. I am only speaking as an ordinary individual, and not professionally.

632. You spoke of the cost of these works beyond that which you would obtain by the resale of land as being something like 500,000*l.*?—Yes.

633. How do you propose to raise that 500,000*l.*?—I do not know that that is within my province. I should imagine that it would be well worth the while of your Board that they shall contribute a quarter of a million, because that would be saved in the construction of the low level sewer. You dispute the liability to compensate shopkeepers for the injury which they would sustain ; but Parliament

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would have respect to that. If you cause that loss to a hundred people it is a loss to the public.

634. Dou you think that the ratepayers of the metropolis would be prepared to hand over 500,000*l.* to three individuals ?—500,000*l.* has been handed over, and a larger sum than that, to one individual, who has carried out his work with perfect fidelity. I do not see why three or more individuals should not give that security which ought to be satisfactory.

635. (*Mr. Hunt.*) The damage to wharf property would arise chiefly on the east side of Blackfriars Bridge ?—No doubt.

636. I take it that bringing out your embankment to that width between Blackfriars Bridge and Southwark Bridge is with a view of making that roadway to Queen Street, Southwark ?—Yes; particularly there. It is between those points that the great difficulty in the construction of the low level sewer would arise.

637. Suppose you kept the embankment further in to the shore, and kept the level of the road three or four feet above the level of Trinity high-water mark, would not that very much reduce the cost of construction, in the first place ?—Yes ; the cost of construction.

638. Are the wharves between Blackfriars Bridge and Hungerford Bridge of sufficient importance to justify the experiment of having docks, which may become troublesome in reference to mud ?—No, I think not. I think the docks would save the compensation to the wharves, and the question of mud is a question, at the outside, of 2,000*l.* a year. My own opinion is, that you should do all you can to avoid having to give compensation. You know how those questions are exaggerated, and the difficulty of dealing with them. If I could provide a substitute I would rather incur considerable expenditure than have negotiation with a wharfinger.

639. That involves bringing your embankment wall further into the river, and increasing the cost of it ?—Yes. There is a balance of disadvantages.

640. If the embankment roadway were made as close to the existing shore as possible, and if a roadway were formed three or four feet above Trinity high-water mark, would not there be such a saving as might probably more than compensate for any injury that might be caused to the wharfingers ?—I think not, because all above that level is contemplated to be warehouses. I doubt whether the additional expenditure there would not be met by the value of the property which would be created, and especially taken in combination with the facilities that would be given for the conduct of the business which is now carried on at those wharves.

641. Would it be necessary to construct that embankment by means of a coffer dam ?—No.

642. If the new street from the Mansion House to Earl Street is constructed, would you take the sewer up the new street ?—Yes ; you could take the sewer up that street very well.

643. What is the width of your roadway ?—100 feet, including the footpaths.

644. (*Captain Burstal.*) I see by your plan that you take in two arches on the north shore of Waterloo Bridge ?—Yes.

645. Are you aware that the second arch at present is the only navigable arch at low water ?—Yes, I believe so.

646. This line opposite Norfolk Street is now the deepest part of the bed of the river ?—Yes.

647. Under those circumstances it would be necessary to make channels through the third, fourth, and fifth arches of Waterloo Bridge ?—They would most likely make themselves. You would have to dredge in the first instance for stuff for the embankment, the reduced width would create sufficient scour to keep them open.

648. You think that the stream would be increased considerably there ?—Yes ; but not the mean velocity of the stream. If you take as much from the bed as you put into the side there would be nearly the same area.

649. Though the stream might be increased on the Middlesex side, you do not think that it would increase on the Surrey side ?—Not unless you restrict the area altogether.

650. In order to do that you must dredge the bank below and above Waterloo Bridge ?—No doubt ; you would want the stuff.

651. With reference to this dock off Norfolk Street, it could be dispensed with in case it should be considered advisable. It is not a necessary part of your plan ?—No ; but it seems of value to the warehouses on the side of the roadway. The first object is to compensate the wharfingers, and to give increased value to the warehouses on the margin.

652. Do you think that the space you leave off the City Gasworks is equal to the space required for their purposes ?—Yes, I think so.

653. Do you consider it a desirable position for the docks to be at right angles with the run of the stream ?—Whether that is the very best, one cannot say at this moment. That would be a question for further consideration. Probably it would be a little better to let the entrances point a little down the stream.

The witness withdrew.

Mr. J. Walker.

Mr. JOHN WALKER examined.

654. (*Chairman.*) Are you a civil engineer ?—Yes.

655. Will you describe your plan to the Commission ?—My object is to begin at London Bridge and end at Westminster Bridge. I do not propose any roadway upon the embankment, but I propose carrying a solid built embankment as high as the present wharves, and upon that a railway,

656. Do you not propose a roadway ?—No.

657. Can there be a roadway made upon the top of it to relieve the pressure of the traffic in the streets ?—My object in proposing the railway was to carry the people. If you carry all the people who go along the Strand by railway you relieve the pressure of the traffic in the Strand.

658. You propose a railway upon the embankment to take the pressure off the streets ?—Yes. Then, instead of driving piles, I propose that the work as it goes on should be made waterproof ; and when it was completed a sewer could be constructed and carried on in a dry position.

659. Our instructions are to report upon a plan which shall best provide for relieving the crowded streets by a spacious thoroughfare, and, therefore, if your scheme does not include a roadway it would be a useless matter to go into the details, because we could not recommend yours, seeing that it does not comply with the letter of our instructions ?—My plan is available for a roadway. My object was this, in forming the embankment, that the openings in it should be wide openings, so that a barge might go sideways into it. I propose that the floors of the opening and the aprons should be 5 feet above low-water mark. At the back of that I propose to dredge all the ground out, and to fill up between those iron walls with the stuff that comes out, and to leave five feet of water for the barges to be afloat in inside the embankment at all times of the tide. I do not propose to give a sixpence to the wharfingers for compensation, because the barges would be always afloat, and enable them to do double the work they do now. Of course the present wharves would not be deep enough ; they would require sheet piling.

660. That would involve, probably, underpinning the buildings ?—If they like to go to expense upon their own property they might do so. I have a great

notion that the Commission carrying this out ought not to give anybody anything, but should go only to the expense of the real work to be done, which would be 350,000*l.*, to complete the whole concern. The wharfingers, if they liked, could go to the expense of carrying up new fronts to their wharves.

661. How far do you go into the river ?—Through the centre of the first arch of Southwark Bridge ; through the centre of the second arch of Blackfriars Bridge, and the second arch of Waterloo Bridge, past the piers of the Suspension Bridge, and right up to Westminster Bridge. I do consider that you should not shut up all the water by a broad embankment. If you shut up all the water coming up you lock up half the traffic on the river. I say leave a space behind. I believe, when the sewers are all completed, our water would be far clearer than it was before Mr. Chadwick perpetrated that stinking job of turning the whole of the cesspools loose upon the Thames. I look upon the clearing of the water as an object to be got. You have nothing disagreeable then for the sun to act upon, and you will have clean water and healthy people.

662. Would your embankment go further into the river at Westminster than the existing terrace of the Houses of Parliament ?—Not so far there, I think. The only compensation would be at the ends, where the land is required for the stations.

663. You would have gates through this wall for the barges to go through ?—No ; no gates. I would leave an opening wide enough for an ordinary barge. The great difficulty with a barge coming up the river, if it is in the stream, and if the tide is flowing quickly, is that it cannot turn round ; therefore, if it is wanting to go into this opening it will be able to go in sideways.

664. You would have a wide opening and a strong bridge to carry the traffic ?—Yes.

665. Your pier is 20 feet high above low-water line ?—Yes.

666. That would be two feet above high-water mark ?—Yes, to prevent flooding.

667. How would you construct your bridges so as at or near high water the barges could get under ?—I propose that the road should be seven feet above the wharves. *Mr. J. Walker.* 6 May 1861.

668. Your first notion was a railway ; do you propose to carry it upon columns ?—Yes. I propose that the wharfingers should rent that portion of the embankment as a pier. They could carry on all their work while the other portion of the traffic was above them.

669. You would have a raised superstructure for the railway or roadway ?—Yes, for either.

670. Your section does not show that ?—The model shows it.

671. You would have an embankment such as is shown upon your plan raised two feet above high-water mark, and upon the top that you would have a superstructure to carry either an ordinary road or a railway ?—Just so.

672. It would be so high that barges could go under it at high water ?—Yes.

673. You would have wide openings in this embankment, so as to facilitate as much as possible barges getting in and out ?—Yes.

674. Have you turned your attention at all to the question of mud ?—We would always have five feet of water there ; the apron would be five feet above low water. If you have watched the mud as I have in the Tamar you will know that with the first five feet of water the mud is always the worst; directly it gets to 10½ feet there is not half the mud deposited, because the first current that comes along stirs the mud, and carries it with it; but if you raised the apron six feet you would have very little mud behind. We have more mud in the Tamar than in the Thames.

675. Your experience is more with the Tamar than with the Thames ?—There is more mud there, because our lead mines run slime into the Tamar.

With respect to the mud settling behind the embankment. If lock gates are used it would be sure to precipitate and settle, but where the current is admitted freely out and in, whatever may be held in suspension would return into the river before it had time to precipitate in any quantities for many years.

The witness withdrew.

Adjourned to to-morrow at 12 o'clock.

Tuesday, 7th May 1861.

PRESENT :

The Right Hon. The Lord Mayor.
Major-Gen. Sir Joshua Jebb, K.C.B.
John Thwaites, Esq.
Captain D. Galton, R.E.
Captain Burstal, R.N.
Henry Arthur Hunt, Esq.
John Robinson M'Clean, Esq.

The Right Hon. The Lord Mayor in the Chair.

Mr. Henry Harrington Bird examined.

676. (*Chairman.*) Will you explain to the Commissioners your project for the Thames embankment ?—Before explaining the plans which I have the honour to bring before you on behalf of a company whose Bill is now pending before Parliament, perhaps you will allow me to express my gratification at having the opportunity, after something like six years, of bringing these plans before a Commission, who, I feel, are certainly as competent to deal with this question as any that could have been appointed. These plans have been since the year 1854 before the public, and have been submitted from time to time to various public bodies; but the great difficulty hitherto in dealing with a question of this kind has been, that where so many conflicting interests are concerned it has been almost impossible to find a body competent to express such an opinion as will carry a suitable weight, and at the same time whose occupations and whose inclinations would justify their entering into the matter in detail. The question of the Thames embankment is one of the most intricate I ever dealt with or heard of. It is a very easy matter to lay down a plan of the Thames embankment, but it is exceedingly difficult to avoid the numerous objections which are met with on every side. These plans (or rather the plans from which these result) were first of all brought before Parliament in 1854. They were submitted to the House, and went to a second reading, but in consequence of the Metropolitan Board of Works at that time being about to be constituted, there was a general feeling in the House that plans so affecting the inter-communications of the metropolis, and the improvement of the banks of the river, ought not to be dealt with until they had been submitted to the body about that time to be constituted. Upon the constitution of that board, I believe at their second meeting, a memorial was presented to the Metropolitan Board of Works, and they were good enough to refer it to the Committee of Works, who had the plan before them *Mr. H. H. Bird.* 7 May 1861.

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in detail, for, I think, a period of nearly twelve months. At the end of that period they made a report upon it, and upon another plan which was laid before them by an engineer, since deceased, Mr. Gisborne, and the report they made was generally to this effect, that both plans fulfilled the conditions which in their opinion any embankment of the Thames ought to satisfy; but they, after pointing out variations in the details of the two plans, came to the conclusion that the promoters of both had fallen into the error of studying too much the commercial principle, and not quite sufficiently, in their opinion, that which would tend to the grandeur of the metropolis. I need hardly say that that blame, if blame it could be called, was rather praise in an undertaking which was professedly a commercial one; but at the same time it is a very important question for this Commission, as to the principle upon which an undertaking of this kind should be carried out, whether upon commercial principles and self-supporting, or whether grandeur should be studied, and carried out at the expense of the public. I confess that after great consideration I have come to the conclusion that an undertaking of this kind would be better in the hands of private individuals.

677. (*Mr. Thwaites.*) The board had in view other considerations besides the mere embellishment of the banks of the river?—I am speaking of public considerations. I think the board did not state them in detail, but I gathered that their meaning was that they considered, for instance, that the whole of the land created ought to be appropriated to the public, and not for commercial purposes. I have not the slightest wish to cast the least slur upon the Metropolitan Board of Works Report, because I have reason to believe that the board took great pains about the matter. It was a simple question as to whether or not this should be a public or private undertaking. I think, however, that it would be desirable that it should be in the hands of individuals, if they can show a case, and for this reason, that I think it would be found that a great deal less difficulty would exist with the wharfingers on the banks of the river in dealing with a private body than in dealing with a public one. There is a greater weight attached to a public body; but if I were a wharfinger I should prefer an opportunity of settling my terms (not pecuniary terms, but terms for accommodation works,) with individuals than I would with a public body. That it might be a little more costly to the promoters on the score of compensation I am prepared to admit, but on the whole it would be more satisfactory to the public. For the same reason I think that a railway, which I look upon as a material feature in the case, would not be a satisfactory thing in the hands of a public body. I believe there is no public body who has been so competent to deal with the question of railways as the Board of Trade, and yet the honourable gentleman present who represents that department would not, I think, be of opinion that it is desirable that railways should be carried out and worked by the Board of Trade, though they ought to exercise that control which should put them in the position of proper guardians of the public. Therefore in the outset our Bill has been so framed, and our course of action so directed, and our object has been that the work should be carried out by a private company, but under the proper and judicious control of the Metropolitan Board of Works, the Government, the Admiralty, the Conservators of the Thames, and such departments as could exercise a voice in the matter. My first connexion with this subject was in the year 1853, when the plan was deposited for the Thames Railway, which went before Parliament. That was in the hands of an engineer of some eminence; but having had my attention directed a good deal to the subject of the river, I was invited to co-operate in it. When that Bill went before Parliament there was a feeling on the part of the Chief Commissioner of Works that the plans were not sufficiently matured, and I accordingly went to work to study the subject in all its bearings, not merely as an engineer, but I took the opportunity of canvassing the most influential wharfingers along the side of the river, studying, as far as I could, their interests, and I found that those interests were most various; there were hardly two wharves lying together (and that is the great difficulty) the owners of which desired the same sort of accommodation. Generally speaking, I found there were these three classes; first, those who wished for a good deal of ground upon which their goods might be stored, such, for instance, as iron, which required to be stored on a large surface, no matter whether exposed to the air or not, but I found it was a great object to have plenty of land space; others were desirous of having water accommodation, whereby they could bring their barges along to the side of the quay, and send them off again as speedily as possible, certainly in the next tide, if not the same tide; and others were very desirous of having plenty of water accommodation, so that they could leave their barges floating, forming, in fact, floating warehouses, such as in the coal trade. Those were the three principal classes. I endeavoured, as far as possible, to study their several interests, and I found in the first starting of the matter that it was impossible to look upon this question or to deal with it as a purely engineering one. Although the navigation of the river is the most important subject, and though nothing, of course, could be sanctioned that would interfere with it, yet I thought that the slight variation that would be necessary to carry out the engineering part of it, to make it suitable to the commercial interests, was such as must command attention; and I do not think, after a full investigation of the subject, that it would be possible for any Government, even if they took it in hand, to carry out such an undertaking without most carefully studying the interests of that most valuable class of property along the banks of the river. Those who have not looked so closely into it may, to a certain extent, depreciate the importance and value of that trade. I feel that the Right Honourable Chairman, who knows the city so well, will agree with me that it is of the very utmost possible importance. I heard in this room a statement made, that the property between Chatham Place and the Temple was comparatively unimportant. I believe that if you had to pay compensation, and to purchase that property, it would cost more than the carrying out of the whole works together. These plans were submitted by me to the late Mr. Brunel, and it was one of the first points that he, though an engineer, who did not see difficulties, at once took. He said, "Before you go further you must satisfy me "that you are prepared not injuriously to interfere "with the interests of the wharfingers; for I tell you," he said, putting his hand upon that part of the plan, "it will be no use to talk of half a million if you are "going to purchase that; that alone will cost you "more." I will first describe what the particular features of the plan are. I may state that it is based generally, as regards the dock system, upon a plan that was brought before the Commission of 1844 by Mr. Page. It is only fair to Mr. Page to state, that he was, beyond all doubt, the first engineer who proposed the plan of floating docks, without which, I believe, the embankment of the river is utterly impossible. Mr. Page's principle was a floating dock, and a mere line of embankment 20 or 30 feet wide; and his object was, not to injure the river for the purpose of the ebb tide, allowing the water to flow freely in and out, and merely having channels, so that the water inside should not be disturbed by the flow of the tide. That plan, with the utmost respect for Mr. Page, did not seem to me to quite carry out what was required, because it was impossible to construct such a road as ought undoubtedly to be constructed if any embankment were carried out at all, and it was also impossible to construct upon that principle the railway. I, therefore, in going into the matter, made up my mind in the first instance that either tidal or floating

docks were essential; that there must be sufficient space for the purpose of the road and for the railway; and the main question was, whether you might extend the line of embankment sufficiently far into the river to enable you to carry out those objects, leaving sufficient space for the trade to be carried on inside. The plan before you is for an embankment from Southwark Bridge or Queenhithe to Westminster Bridge. The embankment in front of Whitehall Gardens, Somerset House, and the Temple Gardens, and a portion between Blackfriars Bridge and Queenhithe Dock, is solid. The rest of the distance contains docks, such as that near Manchester Buildings, or opposite the wharves adjoining Manchester Buildings; from nearly opposite Whitehall Place to Waterloo Bridge; opposite the wharves between the Temple Gardens and Arundel Street in the Strand; from the Temple Gardens to close upon Blackfriars Bridge, and a certain distance below Blackfriars Bridge, the dock above being Whitefriars Dock and the one below being Blackfriars Dock. The total dock accommodation which the plan provides is 15¼ acres; the solid embankment is 35½ acres; making altogether 50¾ acres taken from the river. The width of the river will vary, commencing at about 800 feet at Westminster Bridge, and being at Southwark Bridge about the same width as exists there now. The line that this plan is laid down to is that commonly called Captain Vetch's line. It is a medium line between that selected by many engineers. I think there cannot be a doubt that it is one which would be very satisfactory to the navigation; but I think that even this line may be varied for the purpose of giving greater accommodation to the wharfingers' interests. Questions have been raised as to whether the embankment line ought to come as far as the second arch of Waterloo Bridge; but before the Commission to which I have referred (the evidence taken before which was published in 1844) the evidence that was given by engineers perfectly experienced and of the highest standing was distinctly, (irrespective of all other questions, and looking at the river itself,) that the embankment line ought to come to the second arch of Waterloo Bridge, that the great point was to flatten the curve at the bend of the river for the purpose of throwing the current more into the centre, to get a more effective scour. Therefore, as far as Waterloo Bridge is concerned, I feel myself perfectly justified and supported by the evidence before that Commission, and which evidence, if you will allow me to state, was of the very utmost value, because it was not given hurriedly; but the Commissioners having written out a series of questions, and very searching questions, to the extent of 40 or 50, submitted them to six or seven of the first engineers of the day not concerned in any question of Thames embankment, and got their written deliberate opinions. I think, therefore, that that evidence is of the utmost value. I may state that that evidence contains the most valuable mass of information on the subject of the embankment of rivers as well as of estuaries which I ever met with in my life. It is a book which no person who has the subject of Thames embankment under consideration ought to omit to study. A great part of it was laid before the Commission by Mr. Page in great detail, and with very great success so far as eliciting the different points goes. Another question has been raised as regards the frontage line adjoining Blackfriars Bridge. When that Commission was sitting, one of the plans which was brought before them proposed to come out to the second arch of Blackfriars Bridge; that was Mr. Page's original plan. I mention that particularly, because I think that Mr. Page has seen fit to alter his opinion on that point. When Mr. Page's plan and the other plans were submitted by the Commissioners to several of the leading engineers, Sir William Cubitt recommended that it should extend, not only to the second arch of Waterloo Bridge but the second arch or close upon the second arch of Blackfriars Bridge. At the present time I think there would be still less objection to that than there might have been then, for this reason, that it is generally understood (the Lord Mayor will know more about it than I do, but the general feeling of the public is) that Blackfriars Bridge is not likely to remain in its present state. If the bridge, as suggested by the City Commission of Sewers, were removed, and a new one constructed, to harmonize with the piers of the railway bridge authorized to be constructed below it, the spans would be larger, and therefore the objection which now exists to narrowing the river there would be very much decreased; and it is of the utmost importance in this question that as much space as possible should be given at this point (*pointing to the plan*). It would be not only useless but wrong to ask for any contraction of the river below Queenhithe, because Southwark Bridge is now the narrowest point, and is therefore in point of fact the gauge for the passage of the water; but if the river at Blackfriars Bridge is not reduced beyond what it is at Southwark Bridge, I think it cannot be contended with any great force that any injury would be done to the navigation; and certainly it is of the utmost possible consequence to the interests of the trade that it should be carried out to that point. That part between Temple Gardens and Queenhithe is, I believe, the real difficulty of the Thames embankment; all the rest is comparatively child's play. In addition to the embankment, the plan comprises a road from Whitehall Place, running upon columns upon the top of the embankment down to Chatham Place, Blackfriars. There are three communications shown here from Norfolk Street, Surrey Street, and Arundel Street. There would be no difficulty in making another, if it were desired, at Essex Street. A communication could easily be effected, if desired, from Waterloo Bridge on the west side, or rather the south side of Waterloo Bridge, if those who represent the Duchy of Lancaster would give their consent, because there is plenty of space for a road. On the other side it could not be done, on account of Somerset House; the road is only shown upon this plan as 50 feet in width. I thought it better to to keep to the width shown in the plan before Parliament; though that might be increased, if thought desirable. This road is proposed to terminate at Chatham Place, Blackfriars. I was asked by an honourable member of the Metropolitan Board of Works, whether there was any reason why the road should not be extended down to Queenhithe, and I stated then that there were great difficulties with regard to Blackfriars Bridge; that even if it could be carried out I did not think it would be a very desirable thing, because concentrating the traffic of such a road as that at such a spot as Queenhithe was not very desirable, unless a further road was carried out; and if a further road were carried out New Earl Street would be a more desirable outlet for that traffic. Then it would not have to come down here (*pointing to the plan*), and then spread afterwards. Another feature of this plan, and which is the peculiarity of the plan, is that a railway is proposed from Queenhithe Dock, running alongside the river up to Manchester Buildings, then passing under Victoria Street, and forming a communication with the Victoria Station of the Pimlico Railway. I need hardly point out to the Commissioners of what immense importance it would be to get a good delivery for the enormous passenger traffic of the Victoria Station. When you consider (I believe I am speaking within compass) that every railway but one of the large metropolitan railways would have a communication with that station,—when the London and North-Western, the London, Chatham, and Dover, the Great Western, and the Brighton, will concentrate a large portion of their traffic there,—it would be of the utmost importance to have a good delivery for them. There is no doubt that a great deal of the traffic which goes to that station may be considered west end traffic, and for

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the reason that there are no facilities of getting to the city; but if that railway were constructed terminating at Queenhithe Dock, with the openings which would no doubt be made if this railway were authorized, I think a very large proportion of the city traffic of the railways would be brought by that route. I know that I am supported in that opinion by some of those gentlemen who have the greatest opportunity of judging, and who feel that it would be strongly supported by the existing railway companies. I may mention that when the plan was brought before some of the most influential gentlemen connected with the Great Western Railway Company, some time back, Mr. Brunel's opinion of the plan was to this effect:—"If you can establish that, and we can get to Victoria Station (for at that time it was not authorized), and if you give us a wharf opposite Hungerford Bridge of something like 500 feet in length, which you can do without interfering with existing interests, we shall be very glad to lease that of you at a rental which would pay five per cent. upon the whole of your capital." That opinion he expressed as an individual, but as an individual who was thoroughly conversant with the feelings of the Great Western Company. The matter was also brought, by the solicitor, before Mr. Saunders, the secretary, who is commonly known as the main spring of the Great Western. He stated that his feeling about it was such that he had no doubt that though his company had subscribed 180,000*l.* towards the Metropolitan Railway, yet they would look upon this as of far greater value to them, and no doubt would be very liberal supporters of it. The scheme was also brought before the Brighton Company, and had there been time that session no doubt the Brighton Company would themselves have been of the very greatest assistance in carrying it out. Unfortunately it came before them late, and there was no opportunity of doing so. The plan was laid before Mr. Fowler, as representing the Victoria Company, and he was good enough to say that he thought highly of it, and would give all the support in his power in bringing it forward. I merely mention this for the purpose of showing that this is not a hastily considered matter, but that it has been carefully gone into, and that there is reason to believe that I was justified in stating that the construction of the railway would provide means for carrying out the whole of the works, which is the basis upon which I have gone with regard to this plan. That assistance might be rendered by Parliament, if they think fit, and by the Metropolitan Board of Works, I am well aware, and the promoters would be only too happy to have that assistance. But if the case were put in this way,—"Parliament will give you the requisite sanction, "and the Metropolitan Board of Works will assist "you as far as their powers go, but you must carry "the work out from public subscriptions,"—I believe I could satisfy Parliament that we were in a position so to do. The total estimate for the construction of these works is 688,250*l.*, which includes the construction of the embankment, the public road, the railway, and the sewer seven feet in diameter. The sewer is not shown upon this plan, but the mode in which I propose to carry it would be to carry it along the shore of the river, the invert being at low-water mark. I had originally proposed a sewer of a larger diameter.

678. (*Chairman.*) You carry the sewer close to the existing edge of the shore; close to the existing wharf walls?—Yes; just leaving sufficient space to protect the wall from behind, before the sewer is constructed; as close as circumstances will admit to the wall. The sewer was originally proposed of a larger diameter; but when the Committee of last session was appointed plans were laid before them by many engineers; among others was a plan laid before them by Mr. Homans and Mr. Bazalgette, the engineer of the Metropolitan Board of Works, which proposed a sewer of six feet in diameter. I bowed at once to such authority, and was content with seven feet; but if it were considered desirable to have a larger diameter, the only difficulty would be that where we are confined in space by the mode of construction it might rather cramp us. There is a peculiarity in the plan of the construction of these docks to which it is necessary to draw your attention. The railway is carried altogether at a low level, and this is I believe the first plan which was proposed upon that principle. A plan had been proposed formerly by Sir Frederick Trench, and subsequently by Mr. Gisborne, for carrying it on a high level; but I felt that there were so many objections to a high level that I did not take that view of it, and I thought it would be best carried on a low level. The difficulty then was to get access to the docks, in consequence of the railway intervening. That difficulty is proposed to be surmounted by having openings and locks, and passing the barges through aqueducts over the railway into the dock. This (*pointing to a view*) is the view of the works from Hungerford Bridge; this is the actual view drawn to scale. The Commissioners will see that the embankment is proposed to be of the width which is shown here, with a road along the top of it, and the railway at a low level, and these are aqueducts constructed across the railway, leaving enough head room below. The level is such that for a certain space about high water those gates may be open, and the craft will pass freely in and out; at other times they will make use of the locks to get in or pass out at any time of the tide. That other drawing (*pointing to it*) shows the same thing on a larger scale. That is the view, looking towards Westminster Bridge, showing the way in which we propose to deal with the ground in front of Whitehall Gardens. There is a feature in that plan which I think has not been generally noticed by some who have taken objection to the principle. Many inquiries have been made by this Commission, and much to the point, as to the subject of mud in the docks. By this system there can be scarcely any mud brought into the docks; the water will only pass in when the tide has to rise the last three feet, and I need not tell the Commissioners that little mud would be held in solution by the top water at those times. If you have ordinary tidal water passing in and out there is a considerable amount of deposit, which, though not sufficient to be any practical bar to clearing it out, will entail expense. This system gets rid of that difficulty, because the water in fact will be nearly pure when it goes in, even before the works now in the hands of the Metropolitan Board of Works are carried out; but the state of the river when they are completed will be very different from what it is now; the enormous mass of sewerage passing into the river must affect very seriously the question of deposit, and though it may be some time before it is cleared, yet I trust we shall all live to see the river a very different thing from what it is now. Whether salmon will ever come up here again I do not know; but I think that there is no doubt that upon this system, with the carrying out of the sewerage, and with the water so much clarified as it is at the top of the tide, there would be scarcely any appreciable deposit. What there was we should have to clear out. Those entrances show 40 feet and 20 feet; the 20 feet entrances have locks; the 40 feet entrances have mere tidal gates, with the object of giving every accommodation to craft just at high water, when they want it most. I believe I am quite within the mark when I say that there is no craft passing from the space which this large dock would occupy except within about an hour and a half before and after high water. The craft come from the pool with the tide, and come here at the top of the tide.

679. That would be about three hours?—Yes. During the last of the flow and the first of the ebb craft arrive and depart, but during the remainder of the tide scarcely any would arrive or depart. This dock would enable them to do so, if the tide would

enable them to do so. Too much stress has been laid upon getting freely in and out of the docks at any time of the tide, because when the tide is ebbing it is clear that the craft cannot come up, and there would be very little use in allowing the craft to come in then. There is very little trade from this part of the river upwards. It is almost all downwards, the empty barges going down and full barges coming up, chiefly in the coal and the straw trade. You will perceive that along the river front here at different places near the entrances of the docks I have shown dummies, which I propose to be moored to assist the craft. I believe one of the greatest difficulties anticipated by those connected with the wharfingers' trade (and of course they are naturally jealous of their interests) will be to check the craft when the rate of the tide is increased, owing to the contraction of the river. If that is found to exist, those dummies will get rid of it, because the lightermen will be able to jump on the dummies, hitch on the barges, and check their speed. I think that those dummies will not be found to be any impediment to the navigation, and they would be a material assistance to craft getting in. I come now to a point which the highest engineering authorities have felt to be the one which should be the test of the Thames embankment, looking at it as an engineering question purely, and not as a commercial question; and that is the question of the amount of water for the ebb so as to keep the channel clear. I am aware that by this system there will be a certain amount of water which will be shut out, and will not be available for the purposes of the ebb tide to the same extent as it is now. I believe that that can be compensated to a certain extent by judicious treatment of the river; but I am not prepared to say that it can be compensated altogether in that way. And therefore I have suggested another mode, which will not only entirely compensate for that water which is shut out from the river, but will really add considerably to the effect desired. I propose to construct a compensating dock up the river on the Middlesex shore, a little above the Kensington canal. The Commissioners are probably aware that there is a large space of ground which at present is not used for any purpose otherwise than for grazing, adjoining the market gardens, but at present it is common land, and cannot be dealt with, except under the authority of Parliament, in any other kind of way. That land a few years since was of very little value. I know that plots of it were purchased at 100*l.* an acre; but since the West London Extension Railway has been authorized the parties have asked rather large terms for it, and I believe that they have got those terms, and therefore that, no doubt, to a certain extent, has fixed the value for the remainder. I believe that there might be difficulty now in purchasing that land, which is about opposite Battersea Church on the Middlesex shore, at under 500*l.* an acre, but that 500*l.* an acre would be very well laid out on that purchase. I propose to construct a dock of 22 acres at that point, with outlets to the river, by means of which the water could be let out at such times of the tide as were most convenient, so as to allow the river to be scoured in those places where it was most required. The scouring power of the river is generally greatest at the time of about two thirds of the ebb, and of course it can be easily regulated that the water should be so let out of the dock as to reach any particular portion of the river about that period. The dock itself would be no loss, because the ground which we should obtain in the excavation would be partially made use of in the formation of the embankment, and the dock itself would be available for carrying out the purposes of some of the large railways for the coal trade. You perceive that the dock shown here, called the Railway Dock, is already under construction by the associated companies who are extending that West London Railway; and there is no doubt that in the course of a few years they will gladly avail themselves, in consequence of the increase of trade, of a portion, if not the whole, of the dock which we propose to make. It may be observed that this proposed compensating dock would not stand in the same position as the docks at Hungerford Bridge and other places with regard to mud, because we should have there no railway acting as the sill; the water would go up to high water and down to low water, and there would be therefore a deposit of mud. That deposit, instead of being a loss, would be a decided profit, because the whole space behind, for a considerable distance, for many years to come, will be used as market gardens; the mud that would be extracted from that dock would be of the greatest possible value to those gardens; there would, therefore, be no loss whatever in the construction of that dock. The cost of the land, and the excavation and the walls, are all included in the estimate which I have given. To recur again to the subject of the docks. I will point out to the Commission the difficulty which I alluded to as existing between Temple Gardens and Queenhithe. The trade carried on in that portion of the river is very great indeed. Any contraction of the river beyond the point of the second arch of Blackfriars Bridge, I think, could not be permitted, and even with that extension it would be very difficult indeed to take anything off for the purpose of the construction of the embankment or the works, because the trade there being large they want as much space as possible for their craft. The way in which I propose to deal with it at that point is to have a river wall 20 feet in width, which will keep the course of the flow of the river in harmony with the rest of the embankment, but with tidal openings, by which the craft can go in underneath the road, the road being carried on columns. The headway of the road is 10 feet above the top of the embankment, which again is 3 feet above Trinity high-water mark. Stress may be laid upon the advisability of not allowing the embankment to come to the second arch of Blackfriars Bridge, but I trust the Commissioners will not think the river would be too far narrowed by that; and though the line is not so shown upon this plan, the limits of deviation are such that, with the sanction of Parliament, we could come out to the second arch. It would then give accommodation which, I believe, would perfectly satisfy the proprietors of those wharves, and those carrying on trade there. The same thing would apply, to a certain extent, below. If the line were permitted to be brought to the second arch of Blackfriars Bridge, which is where the present pier stands, it would enable the system of the dock shown at Blackfriars Bridge to be carried out further down, and would give exactly the accommodation which I understand the wharfingers most desire; that is to say, a dock within which they could be out of the action of the steamers at the piers, but which would give sufficient space for getting in and out from their wharves. I think that it is perfectly impossible, between Temple Gardens and Southwark, to carry out any system of docks with locks. I think that the docks between those two points must, if constructed at all, be merely tidal docks, because a lock would require at least 80 or 90 feet in length, which would absorb so much of the space that would be obtained that what was inside would be almost valueless. In canvassing some of the largest wharfingers I found a feeling, particularly near the present Paul's Chain pier, where there is a very large iron interest, that it is very essential to the proprietors that they should have access close to the side of their wharf. So strongly was that felt, that a gentleman who gave evidence before the Committee of last year and before the Commission of 1843 told me, "If you can make us a dock we will support "you. If you cannot make us a dock we will oppose "you in every kind of way, because you will ruin "our trade." I need hardly say that an intimation of that kind is deserving of the utmost attention, because the trade is far beyond what any one would imagine who has not carefully investigated the subject. The Commissioners will perceive that, accord-

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ing to this plan, between the Temple Gardens and Chatham Place, and also below, the railway is almost lost sight of; in the dock it is represented by a dotted line. That is proposed to be dealt with in a peculiar way. The ground there is very hard; there is about six feet space from high-water mark to the present surface upon which the craft lie; and it is proposed to carry the railway in an iron tube, which should be level with the present surface of that foreshore; the craft, therefore, would come in and lie on the top of it, and it would not interfere with their trade in the slightest degree.

680. What height would it be in reference to high water?—In reference to high water, the top of the tube would be six feet below Trinity high-water mark.

681. (*Sir Joshua Jebb.*) The barges would not have three hours?—They would have the same as they now have exactly. This upper section (*showing a drawing*) represents the river at Whitefriars. The front line of embankment there is shown to correspond with the front line of embankment here. The Commissioners will perceive that there is only a section of about 20 feet of embankment at that point, sufficient to keep the direction of the channel. This line is the present ground surface; that line representing the present wharf front. It is proposed to construct the road upon columns, two of which, as shown there, would be standing in the water, the railway passing in the tube inside, and the sewer being on the inside of that again. This drawing (*producing another*) is based upon the principle of the embankment being carried further out. If it were dealt with on that principle there would be space for the railway to be brought up to the present shore line, and would then leave sufficient space for the craft. There would be iron piles here, and there would be a floating fender, rising and falling with the tide, and preventing any injury to the piles by barges. This system in the second section would enable the railway to be raised higher. The other system would require the railway to be carried at a lower level. Either plan might be carried out. I have here on a larger scale a section of the tube proposed to be constructed. The Commissioners will see that this has been carefully matured and carefully estimated, and is ready to be submitted at any time to the contractor. This is the tube as shown in that section, combining great strength and at the same time no very great cost, having a coating of concrete upon the top, and that would carry the craft with the greatest ease. That is the system proposed to be adopted at the part of the river called Whitefriars Dock and Blackfriars Dock, and for the reason that it would be almost impossible to encroach upon that space without incurring such an amount of cost in compensation as would make any embankment almost impracticable. This cross section shows the mode in which it is proposed to deal with the construction of the embankment opposite Hungerford Bridge, as I have described it before. The road is carried on columns on the top of the embankment. This space representing the lock chamber. This is an aqueduct constructed over the railway, and which would give an entrance into the dock here. If it should be considered that locks of that lift were objectionable, there is another mode of dealing with the subject, and still within the powers of our Bill, namely, by carrying the railway along the shore, and constructing it upon the principle of this other section. Though there is a lock, the lift is very slight indeed, and the railway would be carried close to the shore. This lower section would show the plan for carrying the work past Temple Gardens, where the whole of the ground is proposed to be given up to the Templars, merely reserving the public road, the railway being carried underneath. This would have an advantage over any plan for carrying the railway above, because not only would there be less obstruction to the gardens themselves, but there would be no difficulty arising in consequence of having the railway and the road runnign upon the same level, and being obliged to have a screen for preventing horses being frightened. Any screen, even carried up merely to the level of a horse's eye, there, would be objectionable, and a great eyesore to the persons using the Temple Gardens and to the proprietors of the houses. That feeling of disinclination to having anything above those gardens I can readily understand to influence those who are interested in the Temple; but no doubt there would be sufficient public spirit among the benchers to induce them to say, if this is to be dedicated to the public, we cannot stand in the way. At the same time they would say, we will not have a railway, for the benefit of private interests, to be a nuisance to us, if we can help it. By this plan the road across may be an inconvenience, but the railway would not be visible at all. There is one objection to the system of carrying the railway close along the shore, because if the trade were to be studied it would have to be altogether a covered way; whereas by carrying it on this other principle you have an open cutting upon the same plan as the extension of the London and North-western to the Euston Station; and you would also have the advantage of having the docks kept clear, by having the railway acting as a sill to prevent the water going in till it arrived at a certain level. I have here cross sections (*producing the same*) of the aqueducts by which it is proposed to carry the craft over the railway. I have heard objections raised by gentlemen not conversant with engineering, who have said, "Supposing the aqueducts to give way, you "would be flooded." Of course I need hardly say that there would be no great probability of that, but the principle upon which that aqueduct would be constructed would in itself get rid of any such difficulty. It would not be supported by columns below, but it would be suspended from two girders strongly supported by stone abutments. The result would be, that the greater the weight of the water the greater would be the tendency to keep the sides perpendicular. The only danger to an aqueduct of this kind would be avoided; that is, the tendency of the water to thrust the walls out laterally; because the greater the weight the greater would be the stiffness of the sides. With regard to the important question of compensation for the wharfingers' interests, that is a subject which has not escaped our attention, and in our Bill we have inserted a clause which I think would be considered fair to the wharfingers and fair to the owners of property. The purport of the clause is, that any land embanked in front of any existing wharf or existing land is to be made over to the proprietors of that land; and it is to be made over to them upon the principle, that the existing interests of the lessees and occupiers shall be fairly dealt with; that is to say, because the owners of the fee have the extra land given them, they shall not charge an extra price to the lessees or occupiers during their present tenancies. We should reserve the right of constructing the road and the railway, and of entry upon that land for the purpose of repairing our works; but beyond that the land would be absolutely given up to those before whose frontage it was embanked, solid, such as, for instance, in front of Whitehall Gardens. We give up the whole of the land coloured green. Between the dock near Westminster Bridge and the large dock at Hungerford Bridge we propose to give it up absolutely to the Crown; but if the Crown would permit, we should wish and be prepared to lay out that as ornamental gardens for the use of the public, and not exclusively for the use of the owners and of the houses. I have had communications with the authorities representing the Crown, and I must say that I do not think that if this Commission were in favour of the plan there would be any difficulty on the part of Her Majesty's Commissioners of Woods and Forests. The same principle would apply with regard to Somerset House, where we should lay out public gardens. The benchers of the Temple would no doubt lay out the new frontage which we should form, and the present walk which they have along the edge of the river

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would be extended, and they would have this extra space for garden. Where we propose to make the solid embankment below Blackfriars Bridge is chiefly where the clause would come in as regards the wharfingers. There are some very large wharves there. I may mention Graham's Wharf, for instance, and many others. We propose to construct the embankment in a solid form to the river, with a railway over, and to give them free access to the new shore of the river, merely reserving the right of the passage of the railway, and the use of it for that purpose, and they would have for the purposes of their trade the whole of that space gratuitously; but as we are prepared to give them that advantage, we think it is not unfair that the Bill should contain a clause that in taking into consideration the compensation to be paid to any wharfinger the arbitrator or jury before whom the case might be heard should take into consideration any improved or increased value which might be given to the property. I think if this Commission should arrive at the conclusion (which I think was the feeling pretty strongly shown by the Committee of the House of Commons last year) that it is desirable, in the event of anybody carrying out the matter, they should have some special protection. I think that Parliament, upon the recommendation of this Commission, certainly would not oppose it; and I think it is only a fair thing that the promoters should not be altogether placed in the hands of the ordinary compensation jury, but that some machinery, which I think would be very easily schemed, should be selected for the purpose of having only fair and proper compensation paid; and from my personal communications with them I have that confidence in the public spirit of those gentlemen who represent the wharfingers' trade (for they are men of business, and could not carry out such a trade if they were not), that I feel they would not object to any fair clause of that kind, which, while giving them proper and sufficient compensation for injury should at the same time be a protection to the shareholders against such extravagant compensations as have been occasionally awarded in other cases. I think it right also to state that in laying out this plan, after very careful consideration, I have come to the conclusion that no very great amount of compensation would be required to be paid. I think that in almost every instance we give to the wharfingers equal accommodation to that which they have at present, and therefore the only compensation would be for temporary damage during the carrying out of the works, and I think that we could so carry them out that no very large compensation would be required to be paid on that ground. In the estimate I have gone into that matter, and I have put such a sum in it as I thought would meet it. At the same time I am not prepared to say that the compensations might not somewhat exceed the amount I have considered sufficient; and our Bill provides the usual borrowing powers, by which our capital of 750,000*l.* can be increased to a million, if necessary. But if it were increased to a million, I am still prepared to show that the railway would be a self-supporting scheme. For, if the Commission will take into consideration the somewhat parallel circumstances, though inferior as regards traffic, of the North London Railway, which was absolutely constructed with the intention of not carrying passengers at all, but being solely a goods line, and which is carrying now 6,000,000 passengers, there cannot be much doubt that the traffic on this line would be at least 50 per cent. in excess of the traffic on the North London line (which did not contemplate passengers at all),—where you would have two of the most populous cities in the world connected by this railway,—where you have a concentration of this enormous traffic of the large railways coming on to the Victoria Station,—and where you have the tendency of the city population to get as far out of town as possible, and to run backwards and forwards. If they could, I have no doubt that they would come to and from the city as I know even now some gentlemen do who have offices about the Adelphi, and who I know run down to Putney to luncheon or for papers, because of the facilities of getting backwards and forwards. I am anxious to refer again to a point which I mentioned previously, with regard to the subject having been some time before the public. There was a plan called the Thames Railway, which was got up by other promoters, and subsequently, in 1854, a Bill for this plan was brought before Parliament, and was referred to the Metropolitan Board of Works, at the instance of the then Chief Commissioner of Works, and in every year, with one exception, since 1854, a Bill has been submitted to Parliament; but there has been this difficulty always existing, that so many different interests have been concerned that it has been impossible to get any affirmative opinion expressed by a department which would carry that weight with the Government as would cause them to sanction the second reading. On two or three occasions the Bill has arrived at the second reading, and once, by mistake, I am told, it was opposed; but evidently the feeling was that it was a plan consisting of many important details, and that those details might very greatly affect not only Crown property but the interests of the public, and it was felt that no plan ought to be sanctioned which did not first of all embrace the requirements of the public interests, and there is no department which has investigated the subject in sufficient detail to enable us to lay such a report before the Government as would induce them to consent to the second reading of the Bill. Two Committees of the House of Commons have had the question before them; but I need hardly say that when a Committee of gentlemen of the House of Commons, meeting for a few hours a day, with every desire to do justice and act fairly between the parties, have 12 or 14 different plans laid before them, when there are no opponents to elicit the real value of a plan, and to point out its defects, it is almost impossible for such a Committee to arrive at any other conclusion than a mere general one as to whether any undertaking of the kind be desirable or not; and I confess that when I saw the advertisement issued by this Commission, inviting plans to be sent in, I feared (though I knew the Commission to consist of men of thorough business habits, and who would listen with great patience to the promoter of each scheme,) that there would be great danger of their being overwhelmed with a number of plans, preventing them from fairly going through them; and I did feel that it might be desirable (if you will permit me to say so) that, after having heard generally the promoters of those plans which combine the features you think necessary in the Thames embankment, and which are within the scope of your instructions, if you should think fit to select four or five or half a dozen of such plans as you think would be most suitable for further investigation, you allowed the promoters of those plans not then under investigation to act rather as opponents for the eliciting of information, it might be an assistance to the Commission, and it might enable them to get at the truth; for very often the opponents may elicit a fact which might not for the moment strike the Commission. It could not, perhaps, be done in the present instance, for with 50 plans it would be impossible; but if you reduce the number of plans to half a dozen, you might allow one promoter of each to appear for the purpose of acting as opposing counsel in the investigation of the plans. I merely throw out that suggestion, because I think it would add considerably to the weight of your report. That plan was followed to a certain extent by the Commission of 1844, because, having reduced the plans to three, they then had an opportunity of submitting those plans to a number of engineers who were at that time perfectly unprejudiced. I am afraid that there would be difficulty now in finding an engineer who has not submitted a plan before you, and therefore you are not quite in the same position. I would suggest that if

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you thought fit you should rather allow parties to appear as opponents to any particular plan which you may have under investigation. I think I have now gone through the several points of the plan. I have only one observation further to make, which is with regard to the financial question. I believe that the capital to carry the undertaking into effect will be forthcoming, if this Commission are of opinion that the plan is a desirable one for the public if properly carried out. We have clauses authorizing the departments who have an interest in the bed and soil of the river, in the navigation, in the sewerage. and so forth, each to send an ex officio director, and that the works shall only be carried out under their sanction. That, I think, would a sufficient safeguard, or any other safeguard might be introduced for the purpose of taking care that such works are constructed as would be for the advantage of the public. If it be necessary, at a future date, to show you that the undertaking can be carried out, I shall be prepared to do so, upon understanding your desire to have such evidence.

682. (*Captain Galton.*) With respect to the sewer, you carry it along the edge of the existing wharves ?—Along the edge of the existing wharves as nearly as possible.

683. How do you arrange for the overflow of the sewerage in case of rain ?—That is a matter rather for the Metropolitan Board of Works to determine, what overflow they will permit.

684. There would be some, probably, in case of heavy storms. How would you arrange for that in the case of those docks ? Would it go into those docks ?—It could go into the docks with the greatest ease.

685. The water would not be changed in those docks, except by the tide ?—The water would merely be changed by the fresh water coming in, and being mixed up with the other.

686. If there were a very wet month, for instance, and that overflow took place very often, would not the water in the docks be liable to become polluted ? —Not with the overflow of water, I think. My impression is, that a report was made, either to the Metropolitan Board of Works or to the preceding Commission, to the effect that the flood waters that came down in a rush of water of that kind really contain very little sewage ; but I speak of course with the greatest submission to the member of the Commission who knows far more upon that subject than I can pretend to know. At the same time I state my reason for having a seven foot sewer, inasmuch as the engineer of the Metropolitan Board considered that six feet would be sufficient ; but at the same time if a larger sewer is required it can be constructed,

687. You said that it was easier for the wharfingers to deal with private parties, but that it would be more costly to the promoters if they were private parties than if they were public. Do you mean that a public body would pay less compensation than private parties ?—I think the public would pay less compensation than private parties. I think that a public body, knowing that they could enforce the carrying out of it, would in all probability do it upon terms upon which a private body would not succeed in doing it. I think that a jury, for instance, would award less compensation in the case of a public body carrying out an undertaking than in the case of a private one. For instance, in the case of Battersea Park, the Crown was constructing the park and the bridge ; that bridge was an undertaking originally promoted by a private company, for which I was acting ; it was brought before the Commision of 1844, and they approved so highly of it that the Government adopted it, and carried it out, and I know that in that case, where we had actually agreed to give a large amount of compensation which was the lowest we could induce the parties to take, the Crown stepped in, and though an amount subsequently increased to 16,000*l.* was demanded, the jury gave 500*l.* ; but then the Attorney General had got a clause introduced into the Bill, that regard should be had to the previous value before the work, and not to the increased value after the work was constructed.

688. Do you intend the road to be free ?—Yes.

689. The road is to be made by the promoters ? Yes. On this plan it is shown as 50 feet. If 75 feet, which I have shown on this other plan, were considered necessary, it could be constructed on the same principle ; that would be an increased cost of 41,000*l.*

690. Do you anticipate that the whole revenue would come from the railway ?—The whole revenue, with the addition of those wharves which I consider would be made use of in connexion with the railway. This portion of the ground which does not interfere with existing interests might be retained by the promoters, and in connexion with the railway would increase their profits. The whole of the funds for carrying it out would come from the railway and the land in connexion with the railway.

691. If the railway is carried entirely in a tunnel under the existing wharves, how do you propose to work it ?—By locomotives.

692. How would you ventilate it ?—I think that there is sufficient space. If the wharfinger has 70 feet, he would not require the whole of that frontage to be covered. A portion would be uncovered, and all that he would require would be access over that portion.

693. What headway is there under the troughs or aqueducts ?—13 feet.

694. Do you terminate your railway at Queenhithe ?—Yes ; it can be extended further afterwards.

695. At what level would it terminate at that point ?—About six feet above low water.

696. Would not you have difficulty in connecting it with any other lines of railway in London ?—No. Any line connected would have to be carried through in a tunnel. The only other line which I consider likely to be connected would be the Blackwall Railway.

697. It would not carry the Metropolitan Railway to the Victoria Station ?—The Metropolitan Railway comes to Farringdon Street, and then by means of the London, Chatham, and Dover extends over the river. It would not be in direct communication, though there would be a communication by means of steps.

698. You do not think that it would be more convenient to connect the railway coming from the Victoria Station with some of those lines, for the general purposes of the public, than to terminate the railway at a low level at Queenhithe ?—I do not think it would be more convenient in this case, for this reason, the other railways have now access to the other portions of the metropolis ; for instance, the South-eastern, the London and North-western, the London, Chatham, and Dover, the Great Western, and the Great Northern all have access to other portions of the city and to Victoria Station. Therefore any traffic from Victoria Station would want to come to the heart of the city or along the river side. It would be more important to connect it at the Victoria Station end than at the city end.

699. How many stations do you propose ? — A station at each of the bridges.

700. You would not get any great speed up ?— At our full speed we should not exceed 20 miles an hour.

701. How many lines of rails would there be ?— Three ; one line being for goods.

702. Would you have any sidings anywhere ?— They could be constructed along the wharves, if desired. We propose two lines for passengers and one for goods. I should mention that it was considered an important question with some of the largest wharfingers, that we should give them facilities for bringing out an enormous mass of goods, and that we should give them a communication with all the railways round London, so that the goods traffic

could be collected during the day and worked during the night.

703. It would be collected on the third line?—Yes. There might be turntables and spurs into the different warehouses, if necessary; that would tend more to relieve the streets than anything I know, because it is the slow traffic of the metropolis which blocks up the streets; and when you consider the enormous quantity of vehicles coming out of Thames Street, and spreading all round to the different stations, there is no greater impediment to the trade of London than that. I should mention that in our Bill we have taken care to introduce a clause to repeal the clause in the Victoria Station Act which precludes goods from being carried beyond half a mile to the river. That was inserted for the purpose of preventing goods from being discharged at the Victoria Station terminus, and it was inserted at the instance of Lord Westminster; but I have no doubt, from what I understand, that there would be no objection with respect to "through" goods traffic.

704. What width of dock do you give at Whitefriars Dock?—We should have 80 feet opposite the City Gasworks, and 40 feet more under the road.

705. Is the dock entered by locks?—Only by tidal entrances.

706. Would it be only accessible at high water?—It would be accessible at any time of the tide at which it is now accessible.

707. They would be merely openings?—Yes, with a gate, which might be closed, if they thought fit, at times.

708. By putting the railway under the shore should not you raise the shore close to the wharves?—No. I should put it at the existing level. You will find that from 6 to 7 feet is the limit from the present surface of the ground to Trinity high-water mark.

709. (*Captain Burstal.*) If the top of your railway tunnel is six feet below Trinity high-water mark at spring tides, and that railway tube is about 60 feet off the wharves, how would barges get alongside the wharves at neap tides; you would only have a foot of water then?—There would be a difficulty at very low neaps, no doubt; but not greater than at presnt.

710. For three or four days there would not be water?—No; but it would be only during those days that that inconvenience could exist.

711. (*Captain Galton.*) Should you make a dock close to Blackfriars Bridge?—I should, if we could be allowed to come out to the second arch; we should then get rid of that difficulty altogether, because we should bring the frontage out to that point.

712. You do not think that the wharfingers would object to that?—No; there are no warehouses along that portion, I think.

713. There is the Grand Junction Wharf, is there not?—The Grand Junction Wharf is a warehouse; but that would have to be dealt with in another way. It has a water entrance. Instead of having that water entrance we should make a railway entrance.

714. What amount of trade is carried on near Manchester Buildings?—The trade there chiefly consists of straw.

715. Is it much?—Straw and marble. It is not so important as those lower down; but I think it is very probable that it might be considered desirable by the Crown that that should be bought up and got rid of, because I understand that the leases of the property about Whitehall Gardens are fast running out, and when they are run out this property will be dealt with on some grand scale, and if that were the case it might be very convenient to have the frontage there, and not to have trade carried on.

716. You said that you anticipated that the rate of the river would be increased by the embankment. Do you mean that the mean velocity would be increased?—It would be slightly increased where the contraction is. It cannot be increased beyond the present gauge. That is at the narrowest part at Southwark Bridge. I tested it there, and found it 3¼ or 3½ miles an hour.

717. How did you measure it?—By floats.

718. Between what points?—A little below Southwark Bridge; only for a short distance.

719. In the centre of the stream?—Yes.

720. Did you measure it above as well?—No, not at the same time; but the stream is no doubt much slower above. The river would not reach the velocity which it reaches below, because even with this contraction it is considerably wider, but it would be increased to a certain extent, no doubt, though not so much as at the first appearance might be thought, because by the system of dredging which we should adopt, and making a compensating area, we should no doubt to a great extent prevent that.

721. You would dredge to preserve the area of the river?—Yes.

722. (*Mr. Thwaites.*) You are not before Parliament, are you?—Yes; the Bill is before Parliament.

723. Has not it been withdrawn?—No; it is suspended, and from time to time is adjourned, for the purpose of the Committee arriving at a conclusion.

724. Have you complied with the standing orders?—We have not deposited the money, and we do not propose to deposit the money till the Commission have made their report; but I have no doubt, from what took place before the Standing Orders Committee, there would be no difficulty whatever. If the Commission were in favour of it we should be in a position to go on with the Bill. I was told that if the Crown gave their consent (and no doubt their consent would depend upon this Commission), there would not be likely to be any difficulty of that kind.

725. You spoke of those docks near Blackfriars Bridge, and you said that your plan would be varied, provided you were permitted to come out to the second pier; that is, you would bring out a solid embankment in front of the wharves to the extent of that which now you propose as a dock?—Not to that extent. We should bring the front line of the embankment out to the second arch of the bridge, which is where the dummies are shown. Instead of having the railway in a tube underneath, we should propose to carry it on a level with the present wharves, and then it would leave a considerably increased space from the line of railway; that is, 50 or 60 feet from the shore up to the extended embankment. We should not make a solid embankment of the width of the railway.

726. In fact you would have a solid embankment in front of the present wharves?—Yes. I mean that the railway would in fact intervene between the wharves and the water, but upon the same level. The railway would be covered, and the frontage of the wharves would be where the outer edge of the railway is. They would have the same access to the river, but they would have it 60 feet nearer to the centre of the stream than now.

727. You would bring out the wharves?—Yes; we should bring out the wharves 60 feet further.

728. (*Sir Joshua Jebb.*) Are you aware whether any engineering difficulty would be likely to arise in having the railway running close along the shore?—There would be of course great care taken in the construction. I am perfectly well aware that there are places where we might meet, not with difficulties, for engineers do not know them, but places which would require great care and some expense; but I have provided for that, because my estimate includes close piling along the whole of that distance, which would be quite sufficient to protect any wharves.

729. I alluded more particularly to quicksands?—I confess that I am not of opinion that we shall be troubled with them much. I have watched the river for some time past, and I have observed the pile driving, and I have noticed how the pile yielded to the blows of the monkey. I think that that is a tolerably fair test of the nature of the soil which you

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have to go through. I think that we should not find any great difficulty from that; but if there should be places where we should encounter any difficulty of that kind, we can get rid of it by dredging it out, and laying the railway in a tube.

730. (*Captain Galton.*) Were there not the greatest difficulties in the making of the Victoria Sewer?—Yes.

731. You pass at a lower level?—The bottom of our railway would be at a lower level. That, though a difficulty, is by no means an insuperable one, and by laying a floor in large portions we should get rid of that difficulty.

732. (*Captain Burstal.*) You said that you anticipated that there would be very little deposit of mud in the docks, because the water in the river at high water is less charged with muddy particles than it is at low water; do you believe that to be the case?—Yes. I think it is clearly the case in this upper part of the river; and you find that the persons who work the steamboats always collect their water for their tea and for drinking as near as possible at high water, for that reason that it is less surcharged with muddy particles.

733. You have not made any experiments as to the amount of deposit?—No. I have noticed that the persons who work the steamboats collect as much as possible at the top of the tide, for this reason, that the fresh water coming down, and meeting the up water, being a lighter body than the water charged with the muddy particles, rises on the surface, and the top water is purer than the water a few feet down.

The witness withdrew.

Mr. T. L. Evans.

Mr. Thomas Lloyd Evans examined.

734. (*Chairman.*) Will you explain to us generally the main features of your scheme?—In submitting my design for the embankment of the Thames for your consideration, I have endeavoured to keep in view the important essentials of economy of space, air, and light. I propose two roadways, one over the other, saving very materially the constant variation of gradients, considering you would not persuade the public to travel over a continual up and down hill road. I confine myself entirely to the objects proposed in your advertisement, for to make a building property of it puts me in mind of the prints of old London Bridge, placing houses on it, to keep out both light and air, and tending to make another over-crowded thoroughfare, besides being likely to do a vast amount of injury to tradesmen on the present line of road. I consider this should be a thorough traffic road, and not liable to stoppages in receiving and delivering goods. Again, by building thereon you would destroy one of the benefits contemplated, viz., an open, airy, and thereby a healthy promenade. Again, by solid embankments from a low level road to the top of each bridge the view of the river would be destroyed to a great portion of the adjoining property. By the plan I propose, neither air, light, nor view will be obstructed; indeed I consider it will engender a current of air. I am forcibly struck with the opinion that to make this scheme in its fullest integrity of usefulness it should be as clear and airy a roadway as over a common. To carry out this object simply is my reason for adopting a low and high level road, giving economy of space and expenditure, the low level road being five feet above Trinity high-water mark, with a granite or iron tramway similar to the gutter plates in Fenchurch Street, on each side, for heavy traffic; and although I intend this road generally for that purpose, I give facilities for other carriages, for instance, parties travelling in cabs to the wharves or to the low lying roads on shore. I give a footpath on each side. I commence this road at the foot of Westminster Bridge, over the ground now occupied by Mr. Page's offices, and have a connexion with Whitehall Place, Craven Street, Essex Street, by a new line of street at the back of King's Bench Buildings, in continuation of Bouverie Street, at the bridges, and at Queenhithe Dock, where I propose this road to finish (as also the low level sewer to turn off), as I consider to carry it further would be only needlessly interfering with the trade in the most important part of this portion of the river, without any adequate accommodation to carriage traffic. A new street from hence to Cannon Street would be of essential service; indeed I see no point where a road would be so advantageous to the general public, and tend to reduce the traffic in the over-crowded thoroughfare so much complained of as this would. A great portion of the traffic from the shipping docks would go this route westward. With respect to the high level road, I take the top of the roadway of Waterloo Bridge as my level, starting from off Westminster Bridge at a gradient of 1 in 50; I then proceed on a level to the Charing Cross and London Bridge Railway, where, I am sorry to say, I am obliged to have recourse to a gradient of 1 in 50, to go over it; I then keep a level road to the Chatham and Dover line, where, unwillingly, again, I have a gradient of 1 in 50 (well may Mr. Bazalgette say in his evidence before the Committee that it was a blot on the thing); I then run on a level to the end of Southwark Bridge, where I propose to finish, for reasons I have given before, with this added, that it would be folly to take more traffic to London Bridge or King William Street, unless both were widened. This road will be on columns without embankment from Queenhithe to Southwark Bridge. By this high level road the light and heavy traffic is entirely divided, a clear, open, and airy promenade is gained, and you have always a roadway clear for travelling, unencumbered with swivel or other bridges. Footpaths are provided on the river side 12 feet wide, on the other 10 feet. Iron-plate tramways, as on the road below, wherein a "Train's" tramway may be placed, which would answer every purpose for passengers to the railway stations or the city, the centre portion of the road being free for horses, carriages, &c. going at leisure. Besides connecting this road with all the bridges, I connect it at Whitehall Place and Craven Street. This street I propose widening, and carrying the high level road on arches or columns; and the same at Essex Street also. At Blackfriars I enter Chatham Place without going on the bridge, that traffic passing under the high level road. The docks I propose to leave as marked on the plan, interfering as little as possible with the present accommodation of the wharves; if anything, they will be better provided for. The aggregate acreage of the docks being 33½; viz. Westminster dock, 1A. 0R. 33P.; Whitehall, 4A. 0R. 21P.; Hungerford, 10A. 3R. 30P.; Somerset House, 5A. 0R. 27P.; Temple, 4A. 0R. 21P.; Queenhithe, 8A. 3R. 23P.; making a total of 33A. 2R. 5P. These I propose to level to a uniform bottom, leaving that high enough to clear itself of any deposit at low water. This may be so managed that each dock should contribute water to flush out the next. It would be bad policy to allow an accumulation of deposit to take place. I intend the water to be kept in them to any convenient height by means of gates. This may be an open question for the decision of those most interested. I enter the docks under bridges, the under side of which are to be from 7 feet 6 to 10 feet above Trinity high-water mark, so that there should be no necessity of moving them, except for high loads. With respect to Hungerford hay and straw wharf, that bridge may be made a foot or two higher; it would then be seldom necessary to move it, as it would give a headway at half tide of 16 to 18 feet. I have introduced jetties for the landing or loading of heavy goods; these I intend should be let, giving the present wharf owners the

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first offer; these would pay for looking after the roads, bridge attendance, &c.; but no building exceeding a small office should be erected thereon. The sewer through the dock entrances I have shown as cast iron four feet diameter in two divisions, as it would give at least two feet more in depth, thereby giving longer time for barges entering. The other portions of the sewer and its connexions I must leave to those who have thoroughly considered it in all its bearings. I need only give a summary of the details of the structure. The retaining walls of the embankment I intend to be of brick, the outside course of hard vitrified bricks, with granite coping, coarse concrete backing, filled in with the hardest rubble from the river; the foundation of walls prepared by piling, concrete, &c., as may be found necessary. The roadway would have the trams laid level with the macadamized centre. The high level road I carry on cast-iron Doric columns. I have adopted this order as being uniform with the principal portion of the architecture on this portion of the river; and although the columns are drawn 50 feet from centre to centre, they may be placed, if considered expedient, at 30 feet; even then, the view would be but little intercepted. For the roadway I use plate iron beams and girders, planked over, and formed in the usual way. That portion over the railways I intend erecting after the manner of a pediment, the tympanum and apex of which may be ornamented with emblematical statuary of the river and its associates. On the south side I have shown an embankment wall only, commencing at Vauxhall Bridge, as the circumstances are so different to the other side. You will perceive I have not coloured the ground behind the same as that where I intend it should entirely be given up, and I should be inclined to advise that the ground so taken should be let to the adjoining owners at a peppercorn, say for 999 years. That a high level roadway should be made over the same, to correspond with the north side, but only 30 feet wide, giving two sets of tramways and a footpath next the river. I am of opinion that the river bed should be formed to an uniform shape as near as possible. This could not be done safely unless both sides of the river was embanked, or the adjoining buildings underpinned to the required depth, which I think would amount to a much greater outlay. Now I come to the estimate. The cost for the north side, getting out from foundations, piling, and building retaining walls, 200,000*l.*; dredging river, forming docks, filling in embankment, and making lower road, 80,000*l.*; dock entrances, 4,000*l.*; columns, girders, forming and making high level road, 20*l.* per foot run, 170,000*l.*; Mr. Bazalgette's estimate for main sewer, &c., 18,000*l.*; purchase of approaches, 60,000*l.*; making a total of 532,000*l.* Contingencies, superintendence, &c., 20 per cent., 21,280*l.*, being a total of 553,280*l.* On the south side, building walls, filling in embankment, &c., 160,000*l.*; roadway above, 127,000*l.*; making a total of 287,000*l.* Contingencies, &c., 20 per cent, 11,480*l.*; making a total of 298,480*l.* for the south side. The north side, 553,280*l.*, and the south side, 298,480*l.*, make a grand total of 851,760*l.*

735. (*Captain Galton.*) You place the sewer under the embankment, do not you?—Yes.

736. How do you bring the existing sewers into it?—I should leave that entirely to the Metropolitan Board.

737. It must pass across the docks, must it not?—Under the docks.

738. Therefore the depth of the docks would be limited in those places?—I should not deepen the docks to the extent which has been spoken of. I should have depth enough to carry the iron sewer across under the docks without any difficulty at all.

739. You said that you would keep the dock at such a height as would prevent the accumulation of mud at low water; at what height do you mean?—The bed of the docks should be a trifle higher than the crown of the sewer.

740. The docks would be dry at low water?—Yes, if required. If the parties interested thought that it would be better, instead of shutting the gates to keep the water in, to let it out. The bottom of the docks would be at the level of the crown of the sewer, the invert of the sewer being at the level of low water, so that there would be plenty of time for it to run out before the tide got up that four or five feet, whatever it might be.

The witness withdrew.

Mr. Alexander Doull, C.E., examined.

Mr. A. Doull, C. E.

741. (*Chairman.*) Will you give us an explanation of your plan?—I have little more to say than what is on the lithograph before you. I think the substance of my plan is contained upon the lithograph. I propose the sewer to be in cast-iron, and near the present wharves, because in the event of the embankment not being carried out, I thought that it would be preferable to do it in that way to carrying it down the Strand.

742. The main features of your scheme are these:—You have a roadway 45 feet wide, raised on Doric columns?—Yes; but this breadth could easily be increased when the state of the traffic may require it.

743. And then you have a road beneath that?—The one outside may be considered a wharf. The high level road commences at Whitehall Place. In the plan which I submitted to the Committee of the House of Commons I commenced at Westminster Bridge, but I consider that Charing Cross and the Bank are the two points which require connection in respect of traffic, and therefore I thought that beginning at Whitehall Place would answer equally well with Westminster Bridge. That portion of high level road from Westminster Bridge to Hungerford was estimated at 66,000*l.* From Westminster Bridge to Hungerford Bridge the embankment to a width of 30 feet would be appropriated as a public promenade. That road goes as far as London Bridge, the portion from Queenhithe to London Bridge being on columns without any embankment whatever, so as neither to interrupt the traffic which would pass under, nor to interfere with the water way. The lower part of the high level road would be as high as the soffit of the arch of London Bridge, consequently craft which could pass under the one could pass under the other. The low level road would commence at Scotland Yard, being 4 or 5 feet above Trinity, and would go on to Queenhithe and connect with any streets where the levels would suit, there being swing bridges to all the docks. Coal barges and those similarly laden could pass in and out of the docks without disturbing the bridges. Those would be required to be open within an hour-and-a-half or two hours before and after high tide, consequently there would be an efficient lower roadway for eight hours out of every twelve. I consider the system efficient, simple, and economical. The subject has been talked about so long now that many people are apt to consider that it is an extremely difficult operation; but I believe the thing would be found to be simple enough. With respect to compensation, of which a good deal has been said, I think there ought to be nothing of the kind till after the work has been executed, when it would be seen whether the parties really are injured or benefited. I believe if that system had been carried out with respect to railways it would have been a great advantage; many people have got compensation for being benefited.

744. (*Captain Galton.*) Have you height enough for both roads underneath Hungerford Bridge?—

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Yes, by throwing the girders above the columns instead of having the girders between the columns.

745. You would get sufficient height for the lower road as well as the upper?—Yes; but if not, I could divert the lower road inside.

746. Have you considered the question whether the docks would be tidal docks or with locks?—They would have single gates only.

747. So as to be entered only towards high water?—The sewer is the limit of the tidal entrance, that I would keep as low as possible. I would put the iron sewer through the dock entrances.

748. The docks would be accessible only for a certain time of the tide?—They would be accessible at all times of tide as the wharves are at present.

749. They would be accessible only for a limited period, say three hours?—The lower roadway would be stopped for that period, access to the docks would be had whenever there was water.

750. (*Chairman.*) I think I understand that you propose to put your sewer at such a level as not to interfere with the water traffic?—The sewer must be put at the level at which it was laid down when it was proposed to be put in the Strand; the sewer is merely brought from the Strand project to the embankment project. If the sewer is lowered, of course it would require greater expense in pumping.

751. You say in your description "This arrange-" ment would admit of the dock entrances being " placed as low as low water, and thus obviate a " very great objection urged by the wharfingers." I inferred from that, that you contemplated the sewer being so low as not to interfere with the water traffic?—You must either take the sewer in sloping ground away from the embankment or sink it.

752. (*Captain Galton.*) From Queenhithe to London Bridge you have an open viaduct giving access to the existing wharves underneath?—Yes. I have no lower road whatever there.

753. Your embankment goes to Queenhithe?—Perhaps not quite so far; it would be well to have the lower road on pillars a little way from Queenhithe towards Blackfriars Bridge also.

754. (*Captain Burstal.*) What is your object in having a dock off Somerset House?—That may be filled up or not. This cannot be considered as a detailed plan. That is Government property, and may be disposed of as they please.

755. Are your entrances all tidal entrances?—Yes.

The witness withdrew.

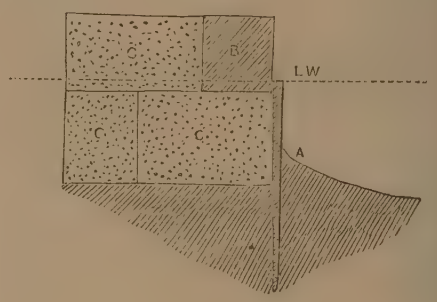
Mr. Doull subsequently sent in the following paper.

" In my evidence I omitted to explain the mode of construction which I propose to adopt in carrying out the works. *a*, in the sketch is cast-iron sheet piling 10 or 12 feet long, 2 or 3 feet broad, and about 2 inches thick, strengthened by ribs and driven down to the level of low water spring tides, and but for the construction of the intercepting sewer this would be the level of the sill of the dock entrances. Inside the sheet piling the ground would be excavated to a depth of 4 or 5 feet below the top of the piles, so that the foundation of the embankment would be placed lower than the bottom of the river outside the piles. *c*, *c*, *c*, is concrete in blocks lowered into their position from a travelling platform, and filling the excavated space to within 6 inches of the head of the piles. *b*, is a block of stone about 4 feet high, and bringing the work about 3 feet 6 inches above low water. Should bricks be used for the facing of the wall they would be built in cement in large blocks, and lowered into position in the same manner as the blocks of concrete.

" This mode of building in block courses would be continued until the work was sufficiently out of the water to be carried on more advantageously by tide work.

" By this means the work could be carried on rapidly and economically without coffer dams.

" Estimate for the whole of the proposed works including the sewer, 502,000*l*."



Captain Spencer Perceval Plumer examined.

Capt. S. P. Plumer.

756. (*Chairman.*) Will you give a description of your scheme?—I am not a professional man, or an engineer, or a scientific man. I am totally unconnected with engineering, and I am afraid I shall be able to throw so little light upon the subject that I shall not set the Thames on fire with my scheme, but I will submit a few ideas upon the subject, and I will endeavour to confine them as nearly as possible to the requirements in the advertisement in the "Times," namely, the necessity of relieving the traffic of the Strand and the city, the reception of the sewage discharged into the Thames, and the embankment of the Thames. The way I propose to do it is to lay down a sewer midway between the present shore walls and low-water mark. That sewer would be 10 feet in diameter. My plan differs materially from any other which has been brought before you, in this respect,—that the embankment will not confine the water of the Thames entirely to its present bed, but it will flow over the embankment entirely. The embankment would be a sloping one, and over that embankment the water would flow in order to admit of ingress and egress through the arches of the roadway to the boats and barges and the traffic along the north side of the Thames. It appears to me that by building up a wall, as is proposed, to embank the Thames, you coop up a space which would be constantly covered with mud. That constantly so much mud would accumulate there that it would be a serious objection if it was confined by an outer wall. In fact, docks seem to me to be objectionable for two reasons. One is, that the barges and boats have not free egress or ingress at all times; and the other is, that the cooping up of so much traffic within a small space would materially interfere with the general interests of the wharfingers; therefore, I propose not at all to coop up or to confine the wharfingers traffic; that the traffic should be carried over the embankment by the flow of the water itself. As far as the embankment is concerned I merely mean to raise midway between low-water mark and the present shore walls a sloping wall of 5 feet in height, which sloping wall is raised upon the top of the tunnel sunk below low-water mark, and then from that sloping wall I propose to pave the banks inwards towards the present shore walls at any incline which might be thought advisable. On the top of this glacis or paved bank I propose elongated arches to admit of free egress and ingress of the barges at all times of the tide. I prefer columns of iron, stone, or brick for the support of the roadway, not only for the lightness and superior beauty of their appearance, but also for the greater space they allow (particularly at high tide) for the

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wharfage traffic. Over the embankment at high water mark there would be I suppose 7 feet or more of water. That is the simple idea which has occurred to me. I am afraid it is not of any great value, but such as it is I have the honour of placing it before you.

757. (*Chairman*). Over the arches you would have a roadway ?—Yes.

758. (*Captain Galton.*) It would be a sort of barge bed for the barges ?—Yes, a raised paved stage for the barges.

759. (*Captain Burstal.*) You do not propose to extend any river wharves beyond the present line ?—No.

760. What level do you propose to have the road ?—Sufficiently high to allow an ample headway under the first or second arches of the bridges across the Thames.

761. You have not described the mode of communicating with the present streets ?—I propose to give communications in the same way as the piers of the present steamers are reached with the streets from the Strand, Arundel Street, Norfolk Street, Cecil Street, and others from the other side of Farringdon Street, coming down to the roadway parallel with the Thames on an incline, so as to keep on a level with the roadway. I prefer a roadway to a railway, bearing in mind the relief of the present heavy traffic in the Strand and City, which would thus simply pass up and down the streets to and from the viaduct to be connected with them.

762. Keeping the roadway sufficiently high for all the water traffic to go under it ?—Yes.

763. (*Sir Joshua Jebb.*) At what distance from the present wharves would the sewer be ?—Midway between low-water mark and the present shore walls.

764. You would not want your high level road to extend all the way to the present wharves, should you ?—I would propose it from one end to the other.

765. It would be a considerable distance ?—Yes, but it seems to me that the simplest plan, instead of making a solid embankment on some portion of the line, and arched roadways on other portions of the line, which has been proposed here already, would be to make in one straight line, or as straight as it could be from one end to the other, a viaduct.

766. (*Captain Burstal.*) Have you had in your mind in doing that to retain as near as possible the same quantity of water in the river as there is now ?—I conceive that it would to a certain extent make the scouring more rapid by the embankment proposed.

The witness withdrew.

Mr. Benjamin Bush examined.

Mr. B. Bush

The following paper handed in by Mr. Bush was read as follows :—

"Mr. Bush proposes to embank the Thames from a point west of the Houses of Parliament, say from Millbank Penitentiary, to London Bridge, but extending a proposed embankment railway to further points on each side, namely, on the western side to a junction with the Pimlico Railway, and on the other side to a junction with the Blackwall Railway.

"The main features of this scheme are as follows:—

1st. An underground railway for carrying both passengers and freight from any points between the before-mentioned railways, thus connecting the docks and the source of supply of all kinds of merchandize to the world with the network of railways traversing the whole of the country, and thus, more than any other proposed scheme, relieving our overcrowded streets.

2nd. A system of passing all the sewage matter collected in the low level sewage plan of the Board of Works through a process of precipitation and filtration, thus realizing three most important advantages:

A. The collection of a most valuable manure.

B. The transferring to the Thames pure water.

C. Saving the cost of wear and tear of all pumping engines or stations for this district but one, as the water could be immediately pumped from the filters into the river.

3rd. Means of erecting and keeping in repair the great mains for the supply of the district with water and gas without the expense, trouble, and nuisance of tearing up the streets or roadways, as those mains would be erected under the roof of the upper roadway, and thus be constantly open for inspection and control. The telegraph wires could be easily fixed in the same manner.

4th. Instead of the privileges and accommodation of the wharfingers being infringed, Mr. Bush contemplates by his plan to give gratuitously a large increase of accommodation, which must necessarily be the case when we consider that to every one of the wharves now existing he adds some hundreds of yards of private roadway (over his filtering beds and proposed railroad), besides the incalculable advantage of immediate annexation without the slightest cost of cartage to every railroad in the kingdom, and further giving them precisely the same amount of river frontage they now possess, but in a clean and always accessible state.

5th. By the simple use of mechanically arranged penstop hatches nearly all the precipitated matter or manure may be loaded into trucks by its own gravitation.

6th. The surface dirt or slop of the embankment, upper roadway, and adjacent streets may at once be run into the filtering beds or sludgeway, thus dispensing with the unseemly nuisances of slop carts with its attendant filth.

"Mr. Bush has refrained from touching upon the advantages claimed for the Thames embankment scheme by many writers and supporters of the undertaking, and has devoted himself to a study of the practical bearings of the case. Yet his system is fully as capable of showing the beautiful as well as practical, as that of any other designer. Yet he will leave to the literary world the task of painting, in brilliant colours, the advantages to be reaped to the health of the people of London by having in its very centre a colossal lung watered by a pure river, and its taste improved by the display of the wonders of art in a row of splendid palaces devoted either to domestic comfort or commercial pursuits."

767. (*Captain Burstal.*) How do you propose that the sewage should be filtered ?—Suppose these (*pointing to Mr. Bush's model*) to be placed so that they should be as low as low-water mark. As the sludge enters and spreads itself over the floor, the water portion would rise around the filterers, placed at proper distances from sewer inlets rapidly passing off, leaving all matter capable of injuring the Thames water. The outer filterers to be filled with gravel stones, the inner with peat charcoal (procurable at 30*s.* per ton), sending the water to the Thames comparatively clear.

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768. You propose to send the sewage direct into the Thames at several points?—Not the sewage matter, the purified water only, having only one pumping station, say at London Bridge or wherever the embankment sewers would terminate, and thus give the river the pure water direct.

769. You would have a roadway on the top?—Yes, with a lower railroad underneath on the river side of works.

770. Have you any plan showing the position with reference to the existing wharves?—No. The inlets to sludgeway can flow out its contents without any tidal interruptions, thus preventing any precipitations in sewers.

The witness withdrew.

Mr. E. Gôhns.

Mr. Ernst Gôhns examined.

The following paper handed in by Mr. Gôhns was read as follows:

"1st. This plan is to effect the simple and perfect riddance and flowing of the sewage of the Thames and the Metropolis to any given point, say 5, 10, 20, or 50 miles, or to any distance or direction; there it may be deodorized, and sent, *not* into the sea which spurns it, but into the land which yearns for it.

"2d. This plan is to obviate all necessity whatever for extracting even the smallest quantity of the water of the Thames, which at the same time it perfectly purifies.

"3d. This plan embraces the simple and perfect prevention of any smell arising from the drainage.

"4th. By this plan any overflow arising from the highest tides, or other cause, is rendered impossible.

"5th. In almost all respects this plan does not interfere with any present, or perhaps contemplated mode of drainage, except to render the latter nugatory.

"6th. All the necessities and desirabilities of such a work are provided for in this plan, which embraces esplanades, as well as a sewer, on both banks of the Thames, and at the water's edge.

"7th. This plan has no resort to pumping."

771. (*Chairman.*) Will you describe your model?—The sewer will be here (*pointing to the model*). Here there will be store-rooms, which could be let, or would contain soldiers, in case of fortifications being required. This would be an esplanade, and here would be a railway next to it. Here there would be a carriage road and footpaths; next the explanades and gardens; and beyond these the houses, warehouses, &c. in continuation, or on a level with any present or contemplated Thames Bridge roadway. Here (*pointing to another part of the model*) would be the entrances for the docks.

772. (*Captain Galton.*) Underneath the road?—Above the sewer. This sewer would take all the other sewers.

773. How do you avoid any pumping of sewage?—There would be no pumping at all; it is done without that.

774. In what way?—I cannot state that at present. It is at this moment my secret.

775. Do you propose to have docks?—As many as are requisite. The model only shows one entrance to the docks.

The witness withdrew.

Adjourned to to-morrow at twelve o'clock.

Wednesday, 8th May, 1861.

PRESENT:

The Right Hon. The Lord Mayor.	Capt. D. Galton, R.E.
Major-Gen. Sir Joshua Jebb, K.C.B.	Capt. Burstal, R.N.
John Thwaites, Esq.	John Robinson M'Clean, Esq.

The Right Hon. The Lord Mayor in the Chair.

Mr. G. F. Lyster.
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Mr. George Fosbery Lyster examined.

776. (*Chairman.*) Will you describe in general terms the leading and characteristic features of your scheme?—Drawing No. 1 is a plan descriptive of the general features of the scheme. Drawing No. 2 is a repeat of No. 1, but with the roadway removed, for the purpose of showing the proposed system of reservoirs, canals, slipways, liebyes, canal-dock, and so on, as well as the approaches and entrances to the side docks. Drawing No. 3 illustrates by longitudinal and cross sections the various levels of the quays, docks, liebyes, training-wall, and bridgeway, and though certain constructive details are shown upon the cross-sections, it is desirable that it should be expressly understood that these are designed more with a view to convey general principles than any precise or determined mode of construction; as, for instance, though masonry dams are shown it is by no means meant to preclude the use of iron, should such be found more desirable. It may be well, however, to state that the estimates for the work have been computed in accordance with the mode of construction shown, to the details of which I will presently allude. The plan proposes the contraction of the river between Westminster and Southwark Bridges by the construction of a training wall in a position closely approximate to that generally considered to be the best adapted for the purpose, in fact identical with the lines of those gentlemen whose plans appear in the Blue Book of last session. It is to commence at Westminster Bridge in range with the embankment of the Houses of Parliament, and to continue in a regular curve suitable to the course of the river to the north pier of Hungerford Bridge, thence to the second pier of Waterloo and Blackfriars Bridges, and it is to terminate in line with the northern abutment of Southwark. Gaps or openings are to be left in the dam where indicated by the large red letters, that at A to be 25 feet wide, and the remainder from A to I inclusive to be 90 feet in width. The level of the coping of the training wall and adjoining wharves is to be five feet above Trinity high-water mark, and the foundations of the former are to be five feet below the lowest low water. The bottom of the main stream alongside the dam is to be dredged to the depth of the foundations, and gradually deepened towards the middle of the river to such uniform gradient as the piers of the existing bridges will safely admit. The foundations of the side walls to the canals and docks are shown to be footed on concrete, though practically the nature of the river

ded may render it unnecessary. It also may be found inexpedient to carry down the dock walls to the depths described on the cross-sections. The main intercepting sewer is proposed to be constructed of iron, and its position is described on the plans by the dark red tint along the northern side of the docks and immediately in front of the adjoining premises, or as near to them as may be consistent with safety. If, however, this position on close examination should be found to be too near to the heavy buildings along the frontage, there is no reason why it should not be carried through the line of docks, as the depth of the docks would admit of a considerable height of filling over the crown of the sewer for weighting it down, though of course the shore line would be preferred, as admitting of greater and more frequent facilities for examination. Provision for the overflow of the storm waters would be made in a manner similar to that required for the sewer, were it carried under the main roadway. The wharfing along the line of docks is also shown to be of iron, and should it be deemed necessary, any heavy buildings may be further secured by piling driven along the toe of the respective frontages, though it is presumed that the foundations of such buildings must either be in the solid clay or gravel; in which case extra piling would scarcely be required. A continuous quay or roadway, having a width of 30 feet, is shown to extend generally over the line of sewer and along the northern margin of docks Nos. 2 and 3, from Whitehall Place to the west side of Temple Gardens, and again from the east side of Temple Gardens with a width of 25 feet along docks Nos. 4, 5, and 6, with openings crossed by swivel bridges, to communicate with the existing side docks at Whitefriars and other places, which it is proposed should still be continued as such. Should it be considered desirable to extend the frontage of warehouses or other buildings over the road to the edge of the docks, the arrangement shown as examples on cross section Nos. 2, 3, 4, and 6, might be carried out so as to afford the advantage of a direct vertical lift into the warehouses from the barges in the dock.

777. (*Sir Joshua Jebb.*) The road would become covered there?—Yes. The main road or bridge way is described on plan No. 1, by the yellow tint, and its gradients are shown on the longitudinal section sheet, No. 3. It commences at the road level of Westminster Bridge, descends to that of the training-wall with an incline of 1 in 50, and continues at that level along the frontage of Whitehall Gardens to the new railway bridge at Hungerford under which it would pass, thence it rises to Waterloo Bridge with a gradient of about 1 in 43, and extends to Blackfriars and Southwark Bridges, with a slightly descending gradient to suit the levels of those roadways with which it would directly communicate. It is proposed that the width throughout should be 120 feet, namely a footway 15 feet wide on the land side, an 85 feet carriage-way, divisible into sections for light and heavy traffic and for a tramway, and a 20 feet footway on the river side, which might be regarded more as a promenade than an ordinary footpath. The line of the training-wall is parallel to the roadway, and extends into the river a further width of ten feet. At Whitehall Place an extension of that street is shown to communicate with the main roadway; at Arundel Street a foot communication by means of a suspension bridge over dock No. 3, is also laid down, but more as an example of the manner in which the side streets may be connected than any fixed position actually determined upon. The bridge or road way, where not a solid embankment, is to be supported on piers 45 feet apart, except at the entrances to the docks and canals, which are shown to be openings of 90 feet. It is presumed that the plans generally are sufficiently explanatory of the proposed system of docks and filled-in spaces without requiring a minute description. It may, however, be stated, that the dock area amounts to 16 acres, having 13,113 feet of quayage. The area of land reclaimed, exclusive of the main roadway or wharves, is equal to 14 acres. The area of the canals is five acres, with 4,740 feet of quayage, exclusive of the centre wall. The capacity of the docks is equal to 46,587,873 gallons, that of the reservoirs is 12,416,105 gallons, and the canals (computed to high water level) will contain 36,555,312 gallons, thereby giving in the canals and reservoirs an excess over the docks of 2,383,544 gallons, or a total water capacity of 95,559,290 gallons. The under-bridge arrangements form a very important feature of the scheme; and as, perhaps, they may not be so clearly understood by the Commissioners, it may be well to enter into more particular details relative to them. At Hungerford Bridge, Temple Gardens, and abreast of Paul's Wharf, the large reservoirs just alluded to are shown to be constructed under the bridgeway, with smaller ones adjoining docks Nos. 1 and 6.

778. (*Chairman.*) By "bridgeway," you mean your elevated roadway?—Yes. I have a certain difficulty in describing it, inasmuch as it is not supported on piers along here (*pointing to the plan*), so that if I called it a viaduct throughout, I was afraid it would be misunderstood. The intervening spaces are occupied by water-ways or canals 45 feet wide and open to the stream, except at Paul's Wharf, which is in the form of a long floating dock shut in by gates. There is an alternative plan to this, however, which would still preserve this part of the canal an open streamway, namely, by forming the dock in the position of the adjoining reservoirs, and keeping the outer space unincumbered by gates. The bottom of the canals is shown to be one foot above low water, and it is to be secured against scour or disturbance by a paving of stone, brick, or some such suitable material. Slipways are shown to be constructed at the head of the canal as well as in docks Nos. 1, 4, and 5. Before leaving the subject of the canals I think it may be well to state that in comparing the displacement of tidal water caused by the solid embankment of the several plans hitherto brought under the notice of the Commissioners, the larger river area thus afforded by the extra area of the canals should be considered as an important feature; as, for instance, though the training wall is shown on this plan to extend as far into the river as the second pier of Waterloo Bridge, in reality (as regards high water area) it does not extend beyond a line parallel with and 20 feet outside the inner wall of the canal, thus giving a greater width to the river by 90 feet than those plans recommended to notice by the Select Committee of last Session.

779. Those being tidal openings the water in the canal would rise and fall with the tide?—Yes, quite so. The reservoirs are for the purpose of supplying lockage and sluicing water to the docks and canals, from each of which an elaborate system of sluices is shown. All the cross dams of these reservoirs have capacious sluices which have their mouths showing down the canal. The piers of the bridgeway are proposed to spring from the side and centre walls of the canals, so as to offer no projecting impediment to the free course of the sluicing water, being connected together by a wall of their own width. The reservoirs are shown to be covered so as to admit of the ground surface being made use of—an arrangement which would enable the frontage of Temple Gardens to be extended under the bridgeway to the river margin. This arrangement is shown on the cross-sections. The canals are for the purpose of affording space for mooring and laying up barges, and the slipways are designed for a like purpose or for repairs. As it is very important that both reservoirs and docks should be kept thoroughly free from the possibility of silt accumulating, it is proposed that they should be supplied from a point up stream, where the water is comparatively pure, and where tidal influence ceases, by which means a sufficient head would be obtained to keep the level of the docks constantly at that of high water. Although the plan by no means precludes the possibility of allowing the water to fall

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in the docks, say to half-tide level, if considered more advisable, (though I have always understood from masters of vessels that a constant level in a dock is much more convenient, as involving no alteration of moorings which the shifting level does,) the water would be conveyed in a pipe of capacity not only sufficient to feed the docks, but to afford the necessary surplus for sluicing purposes. This, it is proposed, should take place regularly by a self-acting process at certain points on the ebb of every tide, say when locking into the docks is over, and so continue until the flood again makes. Positions for steamboat piers are shown upon the plans, but again more for the sake of example than actually determined points. These are proposed to consist of pontoons floating in recesses in the training wall, and approached by side inclines leading from the wharves and bridgeway, and are otherwise so constructed as to offer a continuous and even face to the currents. The advantages of the plan generally I consider to be these. Firstly, that a bridgeway with underneath waterways and reservoirs, such as are proposed, must necessarily admit of the entrance of a larger amount of tidal water than any construction having the solid displacement of an embankment, an important consideration which will materially add to the scouring power of the river and consequent safety of the navigation below the embanked locality. Secondly, it is considered that the thoroughfare of the river will be greatly improved by the removal of the numerous barges and craft which in the case of a solid embankment must continue to occupy a large portion of the river space, and which, by the plan under notice, would be conveniently and safely provided for, along the capacious lie-byes and slip-ways under the bridgeway, and in positions which they could leave or approach throughout the range of the tides, except at low water of the lowest springs, and where they would be protected from any injurious disturbance caused by steamers, ice, or weather, or from the action of the tides or currents. Thirdly, the large openings of 90 feet, without any impediment of gates, will allow of barges entering the canals with safety and facility, and the capacity of the latter will admit of their collecting in numbers near the dock entrances, so that docking might continue with expedition throughout the entire tides; whereas in the case of a solid embankment, with locks opening directly into the river, craft will be subject not only to the danger of entering narrow chambers athwart the currents, which may be of sufficient strength to nip them severely in the entrances, if not to affect their safety by overstraining; but should they arrive abreast of the locks in any numbers also to the inconvenience of having to moor alongside the training wall to await their turn, and thus encumber the river and involve an amount of extra haulage which probably would require a corresponding increase in the number of hands. To further facilitate entering the docks, the works might be of capacity sufficient to admit of two barges at the same time. Fourthly, the fact of providing the feed water from an upstream source where it is comparatively free from solid particles, will obviate the possibility of silt accumulating within the docks or reservoirs, and thus get over a difficulty which has beset the several schemes which I have hitherto heard of as having appeared before the public, and which if not most effectually dealt with must prove a constant source of inconvenience and expense. And further, it is considered that the comfort, if not the sanitary condition of the neighbourhood will be assured by the pureness of the inflow and its freedom from any admixture with the tidal stream, a consideration which might be further enhanced by permitting the supply freely to flow through the docks throughout the entire ebb tide, and thus create a healthy circulation rather than a stagnant pond surrounded by a torpid atmosphere. Fifthly, The plan of under-bridge waterways admits of a larger amount of dock accommodation than any scheme of solid embankment, but this advantage may be said to refer especially to those docks situated below the Temple, the area and convenience of which are considerably increased by the arrangement. It also admits of the space between Castle Street and Southwark Bridge being converted into what is termed on the drawings a canal dock, which, doubtless would be found of great advantage to the owners of the very important frontages along that site, and who, in the case of a solid embankment, would be driven to the alternative of mooring in the river, and unloading alongside the training wall, a fact which must always prove a source of considerable expense, if not of inconvenience and danger. The adjoining archway, under the remaining half of the bridge, if not converted into docks as previously suggested, might be provided with side walls and gates, and the space remaining between the bridge and the warehouses might be roofed in with a low roof similar to a railway station, and thus afford the frontagers the value of a covered space abutting on their water-side premises. A similar arrangement would be applicable for the spaces throughout the entire length of the docks, should the cost of heavy warehouses such as previously suggested, be considered too great. Sixthly, the position of the sewer has been recommended notwithstanding any engineering difficulties which may have to be encountered, with a view to do away with the construction of such a work under the bridgeway, where in crossing the dock entrances it must ever present an impediment or sill requiring a considerable tidal rise to enable barges to cross it, and thus practically shutting up the docks for a great portion of each tide; and though, doubtless, it might be urged in reply that the existing muds present a similar obstacle in the early approach of the barges to the several wharves, and consequently that the proprietors will be no worse off than at present, as they can only arrive abreast of their premises at an advanced state of the flood, it nevertheless is considered that in an undertaking of this kind, which may be said to be of national importance, every possible expedient should be adopted so as to render the arrangements the most perfect of their kind, and thus meet the present or prospective requirements of the public, as there is no reason whatever under the new state of things to preclude the possibility of a train of barges being tugged up by steam power and docked even during an ebb tide. I further consider that the position recommended will admit of the sewer being commenced and made use of with much less delay than in the case of its construction within the line of embankment, as a considerable portion of that work should be first completed before any progress with the sewer could be safely undertaken, whereas along the margin proposed an immediate commencement might be made. In order to overcome any difficulty or unsoundness of construction along a line where water and soils of different compactness may be met with as well for the sake of expedition, I should recommend that the sewer should be constructed of iron (vitrified on the inside to prevent corrosion), and that the outside wharfing should also be of iron, so as to obviate the necessity of a coffer dam. Before leaving this subject, I consider that a certain apology may be due to the very able engineer who is carrying out the Metropolitan drainage, for thus trenching on a point which, doubtless, he has so thoroughly matured; but so many of the main features of my scheme differ so completely from that recommended by Mr. Bazalgette, and as the position of the main sewer is thereby involved, it is hoped that he will not regard the proposal as an interference with his department. Seventhly, it is considered that the proposed roadway along the northern margin of the docks and canal will prove of the utmost value to the wharfingers of the entire frontage, as by it they will be enabled to communicate with the adjoining thoroughfares, and thus secure the advantage of land and water approaches to their premises. Should it be considered desirable, this roadway (I mean the back roadway) might be shut up after business hours by gates placed at either end, and thus render the premises and pro-

perty secure from trespass; but these are questions which should be left for settlement entirely to the frontagers. Lastly, it may be remarked with reference to the south bank of the river, that though no work has been shown in the plans under notice to extend along that line, I nevertheless regard it as an important feature which should not be overlooked in any system of improvement, not only as perfecting the embankments required for the proper control of the river, but also as a means of constructing additional thoroughfares along a position which must ever be a favourite with the public, and which, doubtless, the increasing wants of the metropolis will at some future time demand. I have, however, omitted it in the present instance merely as being less pressing than the northern proposal, though in its arrangements requiring equal care and consideration. As regards estimates, I do not think it will be necessary to trouble the Commissioners with details unless they should desire it. The cost of the works has been computed in accordance with the plans before you, and amounts to 1,070,000*l.* for construction alone, exclusive of any contingent sums which may be required for compensation or purchase of land. As it may be well to explain some of the details of the construction, I have brought some large detailed drawings, which, if the Commissioners will allow me, I will call their attention to. The method I would propose to adopt for the construction of the river wall would be by means of large cyclopean blocks of masonry, composed of brickwork in Portland cement, faced with granite in random courses, well bonded into the brickwork. These blocks would be set without a coffer dam. They are designed to be about 41 tons in weight, having a height of eight feet. They would be constructed ashore, and brought under powerful steam gantreys, and lowered into position from an ordinary staging to extend along the line of dam. The foundations would have been previously prepared by dredging, and, if necessary, levelled by divers. The top of the block when set would stand three feet above low water, at which level all difficulty of construction would be over, and the ordinary plan of tidework might be proceeded with, or if preferred, the system of blocks might be continued. As the instructions of the Commissioners regarding economy of plan seemed to preclude all works of a costly character, I have been compelled to consider the cheapest possible system consistent with safety and durability. I have no hesitation however, in saying, that in my opinion such a method would far surpass any constructions faced with even the hardest Staffordshire blues, as presenting at least two-thirds less joints and considerably greater depth on the beds, and would be infinitely superior and more massive looking in appearance, and in my mind more pleasing to the eye, than the more formal work of horizontal courses, while its durability would exceed that of iron wharfing. It may be well to mention that I have adopted this plan very largely in harbour works which I am now constructing, and have found it eminently successful. I am at the present time just commencing the construction of a steam packet pier on this principle; the foundations are in 12 feet of water at the lowest tides, the tidal rise being 30 feet. The blocks are similar in construction to these blocks, but smaller and backed with granite instead of brick, which in the locality I allude to is expensive, whereas the granite is to be had cheaply. Before adopting this principle, I some years ago prepared some trial blocks and put them to the severest test, weighting them with upwards of 30 tons without the slightest appearance of failure, and this when they were not more than a month old, and so placed on bearings at either end as to induce them to fracture. The cement used was White's Portland. My experience on this point, therefore, has led me to conclude that such a plan is the soundest method of underwater foundations where the depth is not great, and where the surface of the bottom is smooth. I have thought it desirable to explain the matter more fully by having photographs taken of the bank upon which some of the blocks are now lying (*producing them*).

780. (*Sir Joshua Jebb.*) How do you construct those blocks?—At Guernsey Harbour, which is the place to which I allude, I adopted this plan because coffer dams were there out of the question. As our experience does not show us that concrete blocks are sufficiently sound to be placed in a position where they would be exposed to the disturbing action of the sea, namely, as face work, and as we had a large amount of granite upon the bank, I built them as ordinary masonry is built with cement, the faces of the blocks being roughly dressed with the pick, and the upper edges bevelled off. I have had them set in position on the bank, for the purpose of having there photographs taken so as to show the form they would take in the pier.

781. Is there anything upon the external surface?—No; the front joints are carefully pointed.

782. (*Capt. Burstal.*) There is no current at Gurnsey to act upon the foundations?—No, not in the position where these would be set.

783. The foundations of the piers would not be subject to the action of a current?—No.

784. It would not be quite a parallel case with such a plan being adopted in the Thames. If rubble block of this sort were put in as foundations in the Thames, do not you think that the current would act against them, and be likely to fetch them away?—No; I think not with our experience of hydraulic cements, with careful pointing, and using pure cement; besides, they would offer much less jointing to be acted on than brickwork.

785. (*Mr. Thwaites.*) Did I rightly understand you to say that you proposed lowering blocks 40 tons in weight?—Yes.

786. Would not there be any difficulty in lifting those blocks?—Not the slightest, provided you had corresponding strength in the lifting power.

787. The cement work has not given way?—No; lifting is the best test of the strength of a block.

788. (*Chairman.*) As to your locks and canals and so forth, how many acres do you say you have of still water?—The dock area is 16 acres.

789. That is floating dock, in which the water is always kept at top level?—Yes.

790. Then that may be considered as so much abstracted from the tidal capacity of the river?—It may; unless you chose to let the water vibrate through the dock, by opening the gates and letting it out to a certain level there is no reason why that should not be done.

791. The canals are for the purpose of providing room for the barges to lie in, and for facilitating their getting in and out of the locks?—Quite so.

792. You do not propose to make use of the canals for wharf purposes?—You can do so with the greatest ease; provision is made for that by having a continuous approach right along; there is an arch right through the centre pier, so that a gangway could be formed along here, but on the north side of the canals there is no reason why barges should not freely load and unload.

793. With regard to your supply of water from an up stream source for the filling of those floating docks, have you taken that into account in your estimate?—I have.

794. Where do you propose to get it?—I have allowed for seven miles of piping.

795. Where will you find the water?—I should take it from the Thames. It might be abstracted at a certain time of the tide; when the flood is running; you would then have the tidal stream to ebb plus the amount of water in the reservoirs and canals, which would materially assist the scour.

796. Can you tell us the whole amount of acreage abstracted from the tidal capacity of the river?—The quantity abstracted by the docks would be equal to 16 acres; the quantity abstracted by the land would be 14 acres, making 30 acres, and allowing a couple

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of acres for the piers, it would be about 32 acres ; but this is exclusive of the roadways, which have not been computed. I do not reckon the canals as displacement.

797. Will you continue your statement ?—As regards the construction of the sewer along the inshore position, shown upon the plan, I by no means apprehend any danger from the quicksands which are supposed to exist there. I have naturally inferred that all the heavy buildings and wharehouses are not entirely dependent upon the quicksand ; should it be found, however, that danger might ensue from an open cutting, I think any difficulty of that kind might be met by an ordinary amount of engineering skill. In fact I have already the outline of a plan which, I feel assured, from considerable experience in carrying out works similarly situated, would practically meet any difficult case that might present itself, but with which, in the present stage of proceeding, it would be unnecessary to trouble the Commission. As regards the important consideration of accommodation to the owners of the premises along the river frontage, pending the construction of the works, I have thought that some such arrangement as that shown in the sketch would be the best and most economical means to admit of business being freely carried on. During the construction of the sewer and iron wharfing to the docks, (which I recommend should be commenced at its down stream extremity, and be proceeded with in short lengths,) I would propose that a deck or staging, supported on box barges to float with the tide, be fixed abreast of the works in progress ; alongside of this the craft would lie; the approach from the riverside premises would be by means of gangways, somewhat similar to those in use at the steamboat piers. Where warehouses occur, a supplementary staging might be run along the front, and for further facilitating the traffic tramways and light trucks might be laid down. When the work included in the length of the staging had been completed, the construction might be moved to another position to serve the same purpose. I fear I may have entered rather too minutely into what might be regarded as trifling detail, but I consider that even the temporary convenience of the wharfingers is a matter of such importance as to require the most mature consideration and considerably affect the success of any scheme. The barges would be of an inexpensive character, and could be conveniently applied to carrying out the exterior work, or they might afterwards be made use of for the pontoons required for the steamboat piers. With reference to design, I have not attempted any elevations, but I might say that the viaduct in front of the Temple would of course assume a highly ornamental character to suit the locality. With reference to the large spaces of land which would be formed by the plan under notice, as far as my private opinion goes I would prefer that they should be kept free of buildings, as I think the more lungs London has the more healthy will be its condition; and in fact the very enquiry on which the Commission is now engaged may be said to have arisen from the overbuilt state of its streets. As regards the sluicing of the canals, as it is a very important point, I might add that the dams in front of the openings are a mass of sluices, so that the scouring power of the river would be then met by that from the reservoirs, and any silt in the canal would thus be carried out into the stream.

798. The docks being clean they would never require sluicing ?—No ; but a certain amount of silt might lodge each tide in the entrances of the docks and in the canals, which would require that a considerable scouring power to cleanse them should be kept up.

799. You say that your sewer is to be constructed of iron, do you mean of iron pipes ?—It would be an iron sewer about six feet in diameter.

800. With iron sheet piling in front of it ?—Yes.

801. In laying out the sewer you would begin by putting an iron facing ?—Yes ; forming a coffer dam.

802. You do not know at what level the sewer would come with reference to the existing foundations of the buildings ?—I do not.

803. (*Sir Joshua Jebb.*) Your main road is proposed to go under Hungerford Bridge ?—I should infinitely prefer to go from the level of Westminster Bridge to that of Hungerford Bridge ; but, in the first place, these costly houses in Whitehall Gardens, and, in the next place, the crossing of the railway on a level, are a bar to any such line.

804. I understand that your project is to begin to rise from the level at Hungerford Bridge and to go up to the top of Waterloo Bridge ?—Yes.

805. How do you deal with the new railway that is going over the river at Blackfriars Bridge ?—There is a great difficulty there. I believe there is a clause in the Bill which admits of the railway being raised 10 feet. I have understood that, but I do not know it. If, however, the railway there should be considered a permanent barrier to any extension beyond that point my plan admits of being terminated there as well as any other.

806. Your level is the present roadway ?—My level is the present roadway. If I might venture to suggest, I have thought that by a slight raising of the railway, say 5 feet higher than the 10 feet now proposed, both bridges might be carried across the river at that point, the main carriage way being carried at a low level and the railway at a high level, like Mr. Stephenson's high level bridge at Newcastle.

807. (*Chairman.*) Assuming that Blackfriars Bridge was rebuilt and put to any level which might be thought right, would that facilitate you ?—If a headway of 14 or 15 feet could be got by slightly lowering Blackfriars Bridge, and slightly altering the level of the railway, the object would be gained.

808. (*Capt. Galton.*) Your estimate is 1.070,000*l.*, that is exclusive of compensation ?—Yes.

809. It would be increased if you were to meet with quicksands, I suppose ?—Not materially. The item for contingencies would amply meet that.

810. You said that the dock area is 16 acres ; the reservoir area is how much ?—I have not the area of the reservoirs. I give the cubical capacity.

811. What is the area of the canals ?—Five acres.

812. That is the only area that is permanently retained for giving water to the river at every tide ?—The reservoirs and canals. The reservoirs would clear out at every tide.

813. The reservoirs would be filled with water from the Thames ?—Yes.

814. With pure water ?—Yes.

815. And they would be emptied every day ?—Yes ; and the reservoirs would be refilled at such a state of the tide as would induce the tidal stream to supply the place of the water abstracted for the reservoirs.

816. Have you made any estimate of the quantity of water which you propose to obtain from the up-stream every 24 hours ?—The cubical capacity of the reservoirs is 12½ million gallons.

817. Then you would require some for the docks you propose to supply ?—Yes ; that would depend upon the amount of locking required.

818. (*Sir Joshua Jebb.*) You went as far as to suggest that there should be a continuous stream through ?—There is no reason why there should not. An induction and eduction pipe of corresponding capacity would admit of that arrangement.

819. (*Capt. Galton.*) What sized pipe do you propose to bring the water down ?—A 4-feet pipe.

820. Would you have a large reservoir up stream ?—No ; I have made no provision for that. I should abstract it at once from the river.

821. Do you think that you would get the water to rise to the level of Trinity high-water mark in the docks in London ?—Up to high water ordinary tide ; not up to Trinity high-water mark.

822. Do you think that you would get in the few hours that it would be flowing this great quantity of water which you would require ?—I should imagine

that that is simply a question of the capacity of the pipe.

823. You have not gone into that calculation ?—No.

824. What is the width of your canals ?—The width of that canal is 45 feet clear.

825. The barges would remain in there as lay-byes ?—Yes.

826. When barges were locking into the dock, others would lie in these lay-byes ?—Yes ; a certain proportion of this might be kept free of barges for the purpose of those entering the docks lying alongside.

827. Would they be dry at low water ? —Yes ; when the tide fell to one foot above low-water springs.

828. And therefore the laden barges would not float at low-water neaps ?—I should imagine that they would. I do not remember the rise to low-water neaps. As a general rule there would be water for barges ; they would not take any great depth.

829. The roadway over the sewer would, I presume, destroy the exisiting wharf property very nearly, would not it, or interfere seriously with it ?—Not necessarily ; that should be an arrangement, I think, almost entirely left to the wharfingers, so as mutually to accommodate each other. There is no reason why gates should not be put at each end of this roadway, and after business hours the gates might be closed, or if preferred, the roadway might be done away with altogether.

830. During business hours there would be free passage ?—Yes.

831. (*Mr. Thwaites.*) At what point of the river do you propose to take your supply ?—About seven or eight miles up. I do not know whether that would give sufficient head or not ; perhaps not.

832. Do you propose to go above Teddington ?—I should take it beyond the range of the tide.

833. Have you calculated the effect of the abstraction of such a large quantity of water from the river? That which you propose to go into the docks by iron pipes, you would abstract from the river at a higher point, and the river would be deprived of the advantage of that fresh-water at the point of abstraction ?—I look upon it that the tidal water would supply the place of that—the water abstracted from the river for the supply of the reservoirs would be abstracted as the flood tide was making ; consequently, the river would be very slightly lowered by the abstraction of that stream water, but that lowering would be compensated for, I think, by the tidal water.

834. Have you formed any estimate as to the probable amount of compensation which would result from carrying out your plan, for interference with property ?—I have not. I consider that the interference with private property under this plan would be as little as would be possible under any plan ; because the sewer and iron wharfing being constructed simultaneously, an arrangement, such as I have suggested for the use of the wharfingers, might be carried out, while the larger work of the bridgeway could be subsequently proceeded with.

835. In the event of a heavy fall of rain to the extent of an inch and a half in an hour, or an hour and a half, and that fall mastering the capacity of your iron sewer, where would the overflow go ; would it find its way into the docks ? —No ; provision would be made for the overflow in a similar manner to the provision proposed, if the main sewer was carried along the centre of the bridgeway. There is no reason why the same provision should not be made when it is carried in shore as if it were carried 150 feet out ; there might be an overfall here for the storm water, and here (*pointing to the places*).

836. (*Capt. Galton.*) At the Fleet Street sewer, for instance ?—There is no reason why an overfall should not come there.

837. (*Mr. Thwaites.*) Do you propose that it should take place at low water ?—I should imagine that the overflow should take place at a high level to allow for the outfall of storm water at high water.

838. I understand you to say that in the event of the foundations of those walls not being sufficiently secure to justify the formation of a sewer close to those foundations you could carry it through the docks, and yet have sufficient loading to prevent the sewer from bursting from internal pressure?—If eight feet of water was sufficient in the docks, you might have seven or eight feet of ground around the sewer.

839. What depth do you propose the docks should be ?—I should say from about eight to ten feet, if the tube was made sufficiently strong, and if there was a saddle over each joint secured to piles screwed into the clay that would be loading sufficient. You might make it as strong as possible that way ; it is only a matter of thickness of iron and depth of screwing.

840. (*Capt. Burstal.*) You seem to be under the impression that you can get a supply of water from the upper part of the river to fill those docks. It is clear that if you are to get a supply from that locality, you must be convinced in your mind that the water from whence you get that supply must be at a higher level at high water than the water off London is. Supposing the source from which you get your water is Hammersmith or Putney, it must necessarily be at a higher level than it is from Westminster Bridge to Blackfriars Bridge ; have you made up observations of the tide from London up to those places to satisfy yourself upon that ?—None whatever. As I before said I should imagine that that would be simply a question of length and capacity of pipe—if you go above the range of high water you would get enough.

841. The only place you could go to would be Teddington, where the water is locked up. then you would get a fall ; but all the way from London to Richmond there is very little difference, except when the river is swelled by land floods, there is not sufficient difference in the high water surface to give you anything like a fall ?—I will explain to the Commissioners why I went up there ; it was simply a choice of two evils; you must either, if you wish to keep your docks at a permanent level, pump the water by mechanical means into the docks, or let the water flow in through piping.

842. You do not suggest pumping ?—No ; because the reservoir and pumping apparatus would cost, to my mind, as much if not more than the extra piping up to Teddington Lock, besides the constant expense of superintendence.

843. Your plan would entail the expense of a man to attend to the locks night and day ?—Yes ; wherever lock gates are, a permanent person should be appointed to take charge.

844. (*Mr. M'Clean.*) What communications would you have between the wharves and the Strand and Fleet Street ?—I have shown a communication here to Essex Street ; it is very steep, but there is a lane adjoining which might be made available.

845. The new branch of the South Eastern Railway to Cannon Street would also interfere with the high level way ?—I imagine that it would, unless some means of raising the roadway were adopted.

The witness withdrew.

Mr. Henry Turner examined.

Mr. H. Turner

846. (*Chairman.*) Will you explain as briefly, but as clearly as you can, what your plan is, commencing at Westminster Bridge and going down as far as London Bridge ?—I have first to state that when you, by your advertisement, fixed a day for receiving plans, I was at the Liverpool Assizes under subpœna, and

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could only send this incomplete plan at that time to comply with that advertisement. The lines of the portion of the river near Westminster Bridge are on another plan on a larger scale, which I now produce.

The reason why I sent a plan at all was that I had observed that in several designs for the improvement of the river certain lines laid down by Captain Vetch were taken as a basis which was to be considered as settled. Those lines seemed to me to be objectionable for the navigation of the river, but they appear to have been followed by the gentlemen who sent in plans last year to the Committee of the House of Commons; therefore, I was led to suppose there was a prevalent idea that they were to be taken as fixed, and was anxious to bring before this Commission lines materially differing from them, by which, I think, not only the navigation would be improved, but greater facilities could be obtained for streets and sewers.

The line on the Middlesex side which I suggest commences at the new bridge at Westminster, and, instead of falling back from the line of the terrace of the Houses of Parliament according to the plan of Captain Vetch, comes forward into the river on a gradual curve and strikes the third pier of Waterloo Bridge, involving the necessity of cutting a little piece off the opposite side above Waterloo Bridge. From that it takes a regular sweep to Blackfriars Bridge

847. (*Captain Galton.*) Which pier of Blackfriars Bridge?—About the middle of the first arch; then from Blackfriars Bridge, in nearly a straight line to the end of Southwark Bridge, below which I propose to take off some of the wharves, then on to the present quay wall of the new buildings in Adelaide Place at the end of London Bridge, and to the front of the Custom House Quay. I am to stop there, although my plans show lines down to Woolwich Reach, but for purposes of sewerage it is important to go a little lower down, because by carrying the line as far as the Tower, you can get easily from the river side into that which was the ditch on the north of it, and so avoid interference with the streets in the heart of the city. Then, with the line formed in that manner, it would be necessary to cut off a projection at Bankside, on the south side of the river to maintain its proper width.

With those lines, and the consequent dredging of the channel, having in the first instance done everything possible to improve the navigation, you would be in a position to lay out streets; and bearing in mind that you require under your present system of drainage (which I do not consider the best), a large sewer at as low a level as can be obtained, I propose to make streets, which it would follow, from Westminster Bridge to near London Bridge, not on one uniform gradient, but with slight variations to suit connexion with existing streets, and with proposed new branches. Those main streets would be kept clear of the embankment face, and would commence at Westminster Bridge opposite the clock tower, continue to near Hungerford Bridge, where branches from beside Whitehall Place and from Charing Cross along the west side of Northumberland House, previously united, would join. Thence under Hungerford and Waterloo Bridges to near Essex Street, where access towards Lincoln's Inn Fields would be needed, and afterwards nearly parallel to the line of embankment until far enough down to join with Arthur Street, London Bridge. From that point the sewer would have to be formed independent of any street within the wharf walls. Then, in lieu of the docks or canals which have been proposed by several gentlemen, and also to-day by the gentleman who preceded me, I propose that they be kept next the river, not having the street between the river and the docks, but the docks between the river and the street. By that means you avoid all interference with the line of the sewer, as well as the necessity of any arching for the passage of barges, and you provide for the future accommodation of a trade to be carried on in a better class of vessels than the existing barges, and for all the goods that can either now or hereafter be required in this portion of London; whilst, by the plan as a whole, you have deep docks, you utilize this waste ground, and you obtain the requisite facilities for street traffic and for sewerage in the most economical and effective manner. There would be no interference of the one with the other in any place at all. The river traffic would be entirely independent of, and would be dealt with in such a manner as to be facilitated by the new streets, and in lieu of the very objectionable access possessed by the wharfingers there would be the use of those streets, of the docks on the outside, and of the wharf wall from end to end.

For the district to which I belong, namely, the coal district of Newcastle, the question is a very important one, as well as for the inhabitants of London, because it seems that upon the proper carrying of it out depends the necessity or not for the imposition of the coal duty; and it appears to me to be made a stalking horse for continuing that duty. That is an outrageous duty on an article of daily requirement, and it is important to find means to do without it.

848. If you can describe to us the nature of your plan we should be willing to listen to that; we have nothing to do with the coal duty.—So far I have explained the general bearing of it; next, I was speaking as to the carrying of it out.

849. You propose to bring your street out into the river near Waterloo Bridge, about half way into the first arch?—The street would pass, I think, through the second arch; the embankment would pass outside the third arch.

850. What would become of the space that lies between the existing edge of the shore and the proposed line of your street?—Portions would be built on.

851. It would be filled up solid?—Yes, on all the inner side of the street.

852. You spoke of docks; do you contemplate making the docks in the river outside your proposed embankment?—No; inside the line of embankment.

853. It would not all be solid?—No; not all within that line.

854. You would have docks as some of the other engineers have suggested?—Yes.

855. And your barges would have to come through your embankment to get into the docks?—No; the manner in which they might be constructed would be this: consider at each end of a certain space a line of embankment formed solid, and it left either a an open dock or enclosed by lock gates and walls. You could do either, as might be considered most convenient to the parties interested.

856. You have not gone into the question of the levels I suppose?—Yes, I have.

857. At what level would your street be in reference to high water?—It would commence at the level of Westminster Bridge; the road which branches off near Hungerford Bridge would be twenty feet above the Ordnance datum, that is, eight feet above Trinity high-water mark.

858. (*Chairman.*) Would the docks be inside or outside that road?—The docks would be nearer the river. My object is to avoid the expensive complication of the access to the docks beneath the street. There would be a very great saving of expense by putting the docks on the portion of the embankment adjoining the river.

859. (*Capt. Burstal.*) Your street is eight feet above Trinity high-water mark?—At that point.

860. Whereabouts would the entrance to the docks be?—One entrance would be near Hungerford Bridge. I would propose separate docks, as the trade required.

861. The barges would go under the street?—No; I throw the street inside altogether. I avoid any communication under the street.

862. The docks would be outside the line of the street?—Yes. Inwould be outside the line of the

difficulty in dealing with existing wharfage I should pay compensation, but because the docks would give accommodation of so much greater extent and of such superior character there cannot be two opinions upon the amount of compensation on the whole.

863. (*Sir Joshua Jebb.*) You propose to extinguish their present wharves by purchase?—Yes; and to replace them by a line of wharfage and of docks where they might be called for, of a superior character, and give, in addition to that superior wharfage accommodation, the further accommodation which this new street and the branch streets from it into the existing thoroughfares would produce.

864. The street would go past Somerset House?—Beneath Somerset House, probably twenty feet.

865. (*Capt. Galton.*) Below Blackfriars Bridge would the road be continued?—Underneath it.

866. And it would go on to London Bridge?—Yes, in the manner described.

867. Do you abolish all those wharves which exist now?—I do not abolish them, but I modify them by a new line.

868. You cut off all communication between the river and the existing wharves?—Yes, by water.

869. You propose to go on again below London Bridge to the Tower?—I consider that the Metropolitan Board would carry it further then.

870. For the purpose of the sewer?—Yes. For the sake of obtaining good gradients for the sewer, and avoiding interference with the great thoroughfares of the city it would be easiest to go from London Bridge in front of the Custom House and so to a point nearly at the Tower, curving round the Tower to the north.

871. Do you carry the roadway in the same way?—So far as it could be got.

872. Do you think you could get it as far as the Custom House?—Yes; but it would involve the questions of compensation and modification of the frontage.

873. Would not it involve the question of modification of the frontage between the Custom House and London Bridge?—Yes.

874. Those wharves would have to be modified?—Yes, they would be extended and improved. I would give them deep water.

875. Have not they water now in which large vessels can lie?—No; there is no more objectionable place to go to than those wharves below London Bridge.

876. (*Capt. Burstal.*) Have you ever seen any shore dry between London Bridge and Billingsgate?—No.

877. Are you aware that vessels lie afloat there at low water?—Vessels of a certain size. I should think there is nearly 20 feet of water close to London Bridge.

878. (*Capt. Galton.*) Have you made any estimate of the compensation for the buying up of those wharves above and below London Bridge?—No; I take it between London Bridge and Westminster Bridge.

879. Have you taken them between Blackfriars Bridge and London Bridge?—I have not separated them; I have only taken the aggregate.

880. How much have you estimated for compensation between London Bridge and Westminster Bridge?—I do not think that the compensation and the carrying out of the scheme would come to more than 500,000*l.*, deducting the land which would be available; the loss would not exceed 500,000*l.*

881. (*Sir Joshua Jebb.*) If I understand right, your main road would be at the back of the new wharves and warehouses?—Entirely at the back, separating certain portions of the broad expanse of mud on the one side of it from the portion on the other, which would be mainly applied to commercial purposes. The question as to expense would be more the preliminary raising of a sum of money to meet compensations than for the general carrying out of the work; and for that purpose half the coal duty for 10 years would be ample.

882. Where do you put the main sewer?—Down the street, not only for the sake of avoiding interference with commercial property, but also for access to the sewer. I do not suppose that it will be constructed in such a manner as not to require future repairs.

883. You get into rather deep water when you get past the second arch of Waterloo Bridge?—Yes, my line is in the deep channel at that point, but it would throw the channel more into the centre of the river, and leave portions of the present one for docks.

884. With warehouses, it would increase the expense of the construction originally?—I should not have warehouses on the outer bank; any warehouses of great height should be kept further back, nearer the street.

885. All your traffic would go across the new road?—It would go upon it, not necessarily across it; the new road would be the first recipient of goods, and would distribute them at either end, or at the streets connecting with it.

886. Would that be consistent with the object of getting increased communication to relieve the present streets?—Decidedly, because this road should be in width from 60 to 80 feet according to situation, not in any case less than 60 feet, so that you would get a line of communication wider than any portion of the present one, except the widest part of the Strand, and also with better gradients.

887. (*Capt. Burstal.*) In coming down to Blackfriars Bridge, you come very near the present abutment of the bridge for your embankment?—Yes.

888. You trench very little upon the river there?—Very little.

889. Are you aware of the nature of the business that is carried on immediately above Blackfriars Bridge at the City Gas Works?—That is not one affecting the navigation much.

890. There are a great number of barges laden with coal constantly going for the supply of those gas works, how do you provide for that?—If they were gas works for the whole of London, there would be no difficulty in finding accommodation without interfering with the traffic of the river; there is a dock somewhere near there at present where I should afford similar facilities.

891. You mean Whitefriars?—Yes, I should make a larger than that, and put the barges under regulation, so that, instead of being as at present an impediment to the navigation, they should unload or load with rapidity.

892. Barges would pass under your road at that place?—No; the dock would be alongside in the same manner as above.

893. Have you ever thought of the effect which the embankment coming out here, and the necessary excavation you would have to make in the river would have on Waterloo Bridge itself as a structure?—Yes. Waterloo Bridge, I believe, has its piers sufficiently deep to allow of alteration. There is a difference on the south side; they are shallower there I understand than they are on the north; but supposing it were even necessary to underset the piers, it is not a matter of any very extraordinary difficulty, though I do not think it would be called for.

The witness withdrew.

Mr. Christopher Bagot Lane examined.

Mr. C. B. Lane.

894. (*Chairman.*) Will you describe generally your plans; you have no drawings, I believe?—No. It appears to me that the time is now come when, *coute qui coute*, the Thames Embankment must be made. In carrying out a work of the sort which will involve a very large expenditure, all considera-

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tions in reference to it should be regarded as secondary and subsidiary to those involved in providing against the great social evil of London now, which is the dead lock in the streets. I think when so large an expenditure is about to be incurred, means should be taken of deriving such advantage from it at a future period in reference to railway traffic as that all the stations in London might be, by means of a high level railway along the embankment, connected together. Whether the time has come for making a railway or not, is a question. In the present stage of things it might be better simply to make the embankment, but I most respectfully submit that to make a railway at the level and in the position shown in the plans brought before Parliament last year would, in my humble opinion, be a very great mistake, for any such railway, from its position, would be entirely divested of all expansibility whatever.

895. (*Mr. Thwaites.*) What railway are you referring to?—I am referring to the railway proposed by Mr. Fowler in the Blue Book.

896. (*Captain Galton.*) Below the level of the embankment?—Yes, and terminating below high water at Westminster Bridge.

897. (*Chairman.*) Will you go on to describe your own suggestion?—My suggestion is this, to carry a high level railway from the Blackwall Railway along the Thames Embankment through Westminster to the new bridge over the Thames near the Victoria Station, crossing the Victoria Railway, and so on through Pimlico and Chelsea to join the Thames Junction Railway, thus bringing almost all the stations in London into through communication with each other, which seems to me to be of the greatest importance; because the dead lock now existing in the streets is caused very much from the press of railway traffic, and greatly from the press of goods traffic from the river to the railway stations, which, if there were through railway communication from every station, would be taken off the streets, and thus the dead lock in the streets would be avoided. Any low level railway I think would be devoid of all means of expansibility. I do not at all deny that such a railway as Mr. Fowler proposes would at first appear to be a great public convenience, but I think carrying any railway at that level with no means of communication further through this low ground (in Westminster) would be found to be altogether losing sight of the future and of the wants of London, which are manifestly increasing day by day and hour by hour.

898. Have you in any way considered a scheme for a high level railway, or are you only urging the general principle that we ought to have a high level railway?—I am urging the general principle.

899. You have nothing to suggest as to how the embankment should be made, and at what distance from the shore, or as to the approaches to it. You are not prepared to advise at all about the ordinary road traffic; what you have to say to us is exclusively with reference to a railway which you think should be on a high level?—With this exception, that I consider that below that railway the whole way there should be a street, which street, I take it, for the reasons given by Mr. Fowler, should be under all the bridges, but with a high level railway passing over all the bridges.

900. (*Sir Joshua Jebb.*) Quite over them?—Yes. I would have a great iron gallery above all the bridges. It would be nearly a dead level from the Blackwall Railway, falling gently towards Westminster, with a high level station at Westminster Bridge, and a high level station at London Bridge; it would pass along with varying levels.

901. Should you prefer that on the north side or the south side? On the north side. I think the day may come when it would have to be on the south side too. I would add one or two remarks to what I have said in the pamphlet which I have laid before the Commissioners, with regard to the facilities which it would afford. A branch could be carried from the end of this street (Victoria Street), so that Her Majesty, if it were thought proper, could have a private means of passing from her own palace to any railway in England; in addition to that a high-level station at Westminster Bridge would afford facilities which no low-level station could give at all. Suppose a number of gentlemen arrive there at night, going to a division in the House of Commons, they would be under the necessity, by the low-level scheme, of passing on foot, in the dark and in the wet and dirty street; whereas, with the high-level, a covered way might be carried over from Westminster Station, and members of Parliament could pass into the Houses without going into the open air. In the same way at London Bridge, the city merchants could, by a covered way from a high-level station, pass to the Royal Exchange, the Bank and other places; in fact the high-level principle affords the means for carrying out an idea which I saw eight or ten years ago suggested by Sir Joseph Paxton: that is, covered ways, at a high level, for foot-passenger traffic in London.

902 (*Capt. Galton*). Is it quite clear that the railway traffic facility is wanted much for the goods coming from the wharves between Westminster Bridge and Southwark Bridge, except Hambro' wharf?—I am not able to enter into details upon that question, except that it appears to me that a large amount is thrown on the streets which would not be thrown on the streets if there were railway communication—flour, and many things of that kind.

903. Is not that which comes to those wharves chiefly for consumption in London?—Coal, no doubt; but metals and things of that kind would not.

904. Coal and flour are for consumption in London?—Yes; but it is manifest there must be an enormous extra amount of material carried through the streets of London, inasmuch as all the imports which go into the country through London must pass over the streets of London; and it appears to me that that is the cause of the dead lock in the traffic.

905. (*Capt. Burstal.*) The dead lock in the traffic does not arise to any extent from any merchandise which is taken from any wharehouses near the water side to railways. I mean merchandise exclusive of metropolitan requirements. Captain Galton asked you whether you considered that the goods warehoused on the banks of the Thames were required to be taken from those warehouses to any great extent to the various railways, or whether those goods which are landed on the river are for the most part taken to various places within a distance of 10 miles for the use of the people of London?—Within such a radius as that, if there were greater facility of railway intercommunication between station and station, there would be a less quantity of that material thrown upon the streets from the warves. I think it would have a considerable effect upon the streets if that were taken away.

The witness withdrew.

Mr. David Thornbury examined.

Mr. D. Thornbury.

906. (*Chairman.*) Are you a civil engineer?—I am a civil engineer and contractor, and have been engaged for 40 odd years in carrying out extensive works of drainage.

907. You have not had much to do with the Thames?—Yes, I have had to do with the Thames in former times. I was here nearly the whole time of the building of Waterloo Bridge and Southwark Bridge and the present London Bridge. I was also at the removal of the old London Bridge.

The following statement handed in by the witness was read :—

"I find by the London Gazette that your Lordship is appointed Chairman of the Royal Commission to inquire into the plans submitted for embanking the river Thames, in connexion with 'the proposed low level sewer.' I have for the last three years given this subject great consideration, being fully aware of the difficulties to be contended with in executing the same, having myself done similar works on a smaller scale at Ipswich, in Suffolk, some years ago, in constructing a new quay and quay wall, upwards of 3,000 feet in length, with a sewer running the entire length between the wall and the buildings and wharves; the traffic from the shipping to the warehouses and wharves being carried on during the time of construction. As a contractor for the last 40 years for drainage and other works under James Walker, Esq., and other engineers, and from my knowledge of the shore of the Thames (having been engaged in the construction of different bridges crossing the same, viz., Waterloo, Southwark, and London Bridge, and the removal of Old London Bridge,) I beg to submit a plan which is very simple and may be easily carried out. I propose commencing at or near Vauxhall Bridge on the north side of the river, and constructing a river wall a certain distance from the present river frontage, and continuing the same passing under all the bridges down to the west end of Tower. This wall to be the same height throughout its entire length (about 3½ miles), and 3 feet above Trinity high-water mark. Behind this wall I propose constructing a main low-level sewer (a section of which is appended), and the remainder of the space between the river-wall and the present river frontage would be filled up and form a quay which would vary in width owing to the present irregular line of frontage. This main low-level sewer being placed inside the river wall, and running through the entire length of the embankment, would, by means of connecting sewers, (see section) receive the whole of the sewage which now empties itself into the Thames from Vauxhall down to the Tower, from which point I propose to continue the main sewer under Tower Hill to the Commercial Road, thence along the Commercial Road past Limehouse Church, along the East India Dock Road, passing all the docks and through the marshes to an outfall sluice into the river at such point as may be determined upon hereafter. At the upper end of the sewer near to Vauxhall, I propose to have an opening or inlet from the river into the sewer, with sluice doors which could be drawn up so as to allow the ebb water to flow into the sewer and flush the same whenever required. The proposed line of sewer is shown on the accompanying map by a red line. I have made an estimate of the probable cost of this work, extending 7 miles in length, *i. e.* Embankment with the river wall and sewer, from Vauxhall to the Tower, 3½ miles, and the continuation of the sewer from thence 3½ miles further, the amount of which is 854,000*l.*

"Should your Royal Commission require any further explanation or information, I shall be glad to give the same."

908. Where do you commence your embankment? —I commence at Vauxhall Bridge and make a quay in front of all the wharves going under the bridges up to the Tower. I propose to branch off with the sewer at the Tower with a tunnel, and to go in a line towards the Commercial Road, and down the Commercial Road past Limehouse Church, down the East India Road, past the East India Docks, and forward over the River Lea, then an open sewer in the marshes, to an outfall sluice into the Thames near Barking, called Gallions Reach. The sewer will take the whole of the drainage water from this part of the metropolis (*centre of London*). In branching off at the Tower I come to a difficulty, because I cannot go further in consequence of the docks. I branch off and allow the connecting sewers to come into the main sewer, so as to take the whole of the Shadwell water into the main sewer, and not allow any drainage water to go into the Thames. I am not aware of any stoppage at London Bridge by some other main sewer coming up. I am not aware what sewers are to be brought forward. I considered that by carrying out this plan you would get an outfall. In carrying out our drainages, the first principle is to look for an outfall.

909. (*Chairman.*) You have described to us the sewer; now with reference to the roadway?—The roadway would be upon the sewer, and there would be openings at every street, where there are streets now coming down to the river, and of course those roadways would allow the heavy traffic from the wharves to pass along by the general roadway upon this sewer, because it would be used for nothing but the heavy traffic.

910. The section which you have laid on the table shews an embankment about 60 feet in width?—That is a merely a supposition; I must assume something.

911. To what extent would you encroach upon the river, say at Scotland Yard?—I have measured the whole of the distance, the whole of the three miles and a half, and I find that the whole quantity of land taken for my sewer would be 10 acres.

912. Your carry your sewer following the edge of the existing shore?—Not exactly, but pretty nearly; the wharfingers would have the same frontages to the wharves as they have now.

913. Where the barges now lie on the mud, in the event of your scheme being carried out, the barges would lie outside the embankment?—Yes, it might take up 30 feet of the present foreshore, not more; it would be better for unloading the barges, because there would be a quay for the waggons to drive down to load from the vessels and barges and save porterage.

914. You said that there would be nothing but heavy traffic. Do you mean by that that you would exclude omnibuses or gentlemen's carriages?—They might run the risk of getting through, but they would naturally be obstructed by the heavy traffic. The only thing that I see is to make a roadway on the top of this; there might be another road.

915. You mean that you might raise another road?—Yes, upon pillars.

916. Do you think that you could get a road which would be perfectly steady supported on columns only?—Yes, most decidedly.

917. If you were building a road which ought to last for a thousand years, would you advise, as a practical man, that it should be erected on a superstructure of columns or anything of the sort?—It would last any number of years if it were formed of iron. I expect it would be similar to the high level bridge at Newcastle.

918. What is the length of that high level bridge?—About 800 feet perhaps. I have no hesitation in saying that a bridge could be constructed upon that sewer to last any number of years, and to carry any weight.

919. Through the whole length?—Yes.

920. You cannot help us very much in our object. Our instructions are to report upon a plan which will best provide for relieving the traffic in the streets by a spacious roadway along the edge of the Thames?—It would take the whole of the heavy traffic out of the streets, and turn off where it was wanted a great deal of other traffic too, it would be a public quay, and it would take other traffic.

921. (*Mr. M'Clean.*) This sewer is 20 feet diameter?—Yes.

922. Do you propose to pump all the water from that sewer?—No, it would go to the outfall on the other side of Woolwich. I should not want to pump at all.

The witness withdrew.

Mr. J. Gibbs.

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Mr. Joseph Gibbs examined.

923. (*Chairman.*) As we all know, you are a civil engineer of great experience.

The following letter handed in by the Witness was read.

"I beg to bring before your notice a means I have devised for building foundations under water, so as to increase the facility of operation, and decrease the cost of construction; a particular modification of this system is especially applicable to the formation of the proposed Thames Embankment, and by its use the undertaking might be pushed out further into the river than might under other circumstances be deemed advisable; and in addition to this, the time required for effecting this improvement would be greatly abridged.

"Having for some time past studied the question of forming this embankment, I may state, that by means of the operation described hereafter, the line of embankment may be advanced as far as the front of the terrace of the Palace of Westminster, and then taken in a direction as near as circumstances will allow, as will be indicated by the same depth of water lower down the river as that of the terrace before alluded to.

"This embankment would have a double face of masonry (as shown in the drawing accompanying this notice), with openings to admit barge traffic at certain parts to the rear of the embankment, should it be decided on to adopt inner docks.

"The faces or retaining walls of the embankment would be composed of hard brick masonry and cement concrete with proper counterforts or backing, and would be brought up to half tide level in the following manner.

"A first division of the retaining wall, say 50 feet long, having been built, and a stage for travelling gear having been constructed on the side, and to some extent in advance of the wall alluded to, a powerful apparatus or crane capable of suspending 50 to 60 tons is then to be erected partly upon the stage, and further upon bearers suspended from the crane or hollow brick parallelogram the width of the wall, and about 25 feet long. This parallelogram is constructed about 12 feet high, and divided into chambers, and bounded with hoop-iron; and when the cement is set, the structure is lowered to its bed which has been excavated about four feet deep by a travelling machine, which, by working from the stage, will form the bottom horizontally, and accurately to receive the structure.

"The hollow structure being on its seat as before described, one of the cells is to be emptied of water, and the space filled with concrete, formed of clean gravel and hydraulic cement, and when this is accomplished, the other cells, one by one, are to be filled in the same manner. This will bring the retaining wall and counterforts up to half tide level. The rest of the wall may then be carried up in the usual manner, being formed with a facing of brick and a concrete back, after which the crane may be moved onwards for another length. Of course, several divisions of the works may be carried on simultaneously, and at both ends of any one piece of work.

"Should you be desirous of further plans or description of the details here alluded to, I shall be happy to furnish them either by writing or orally.

"Of course, several plans for lowering or transporting these hollow cubical parallelograms of masonry may be devised to meet contingencies which will not appear until the final decision of the nature and extent of the work is made; but, however those works may be designed no other method of carrying them on will allow of the same rapidity of execution or of effecting the object so cheaply as the method which I now place before you."

924 What you bring before us is a method of constructing an embankment which you would deem to be of the cheapest kind to answer the purpose?—Yes.

925. Do you present any plan showing what line you would recommend for such an embankment to take?—Yes. I take the datum of the Palace at Westminster for the embankment which I propose constructing in the river. This is the cross section of the embankment showing the width that I would propose to be used. The line of embankment is indicated by the depth of water in a great measure.

926. In that case you would go a long way into the river, at Scotland Yard for instance?—Yes.

927. What would you do with the space to be enclosed at Scotland Yard?—I have thought much on the possibility of still continuing that land and other spaces as docks, but upon reflection I think that the liability to silting up and the obstruction to those docks would render it necessary to look at the question of compensation, and at once to purchase the wharves between Blackfriars and Westminster bridges altogether. The land would then become available for building purposes and for buildings of a superior class; and it is most probable that the land recovered would go in some measure to pay the amount of compensation; it would furnish a respectable proportion of it. Looking at what has been done in other countries by noble embankments on the sides of rivers,—take Paris, for instance, where the embankments are advanced close into the river, and become very ornamental in consequence, (for Paris, before those embankments were made, judging from the drawings which we see of that city, was in a most wretched condition,)—I think it would be a pity to let any subordinate consideration interfere with the object of carrying out a large work of this sort in the most perfect manner: therefore my proposition would be to enclose the land altogether, and pay compensation.

928. You would obliterate some of the trades which are now being carried on there?—No, it would not be obliteration, I think; it would be a very convenient removal of those trades to places more adapted for the purpose: for instance, we see that the coal trade is now carried on in a much more convenient manner in the suburbs than it is in the centre of the town: we see coal stations round the town, instead of being in the centre as heretofore.

929. You would in fact purchase, we will say, all the coal wharves lying between the two points that you have indicated, at their present value, and you would make the most you could of the land after you had finished your embankment?—Precisely so.

930. And then, if I rightly understand you, the people who at present carry on the coal trade there would have to seek other places round the exterior of the town?—That would be the proceeding; but I think that I am in a great measure justified in that view of the case. There are a number of very small streets, which want widening, leading down to these wharves, and more valuable streets would be made collaterally to the embankment, and the new streets where the wharves now are would be continuations of those streets, so that the wharves would be turned into valuable building property. Then the reclaimed land would go in continuation of that property; so that, after all, looking at it as a national question, that would be the proper course of proceeding. I have indicated on this section the width of the embankment proposed. I assume that an esplanade, in continuation of the esplanade in front of the Houses of Parliament, should further be continued on the front of this embankment, because there is a vast amount of pedestrian traffic in London, and there will always continue to be such traffic. This would relieve the streets, because the footpaths in London are becoming blocked, as well as the main roads. This esplanade would be one of the finest walks in existence. Then, on the inside of that esplanade, there would be three or four lines of rails for the passenger traffic. Then there would be the carriage traffic, with a road of sixty feet and ten feet on each side for footpaths; but if the plan I have referred to

were adopted, namely, the purchase of the land, that would render unnecessary the commercial road for communicating with those docks, because if this embankment were made, and those docks were adopted, of course the proprietors (whoever they might be, of this embankment,) would seek to have other wharves parallel with the embankment, and therefore a roadway would be necessary for that communication entirely independent of the principal carriage road.

931. You are of opinion that the public would suffer no inconvenience from the coal trade being removed from that part?—I think not.

932. What do you say with regard to the straw and hay?—I think it is very proper that that should be removed. I think that no straw sale should take place in a populated neighbourhood like the banks of the river Thames; that would be a very proper removal.

933. So that your suggestion amounts to this, that you would purchase up all the property which would be interfered with or damaged rather than make compensation to them, and then when you had got the whole thing completed you would lay the ground out afresh, and sell it for the construction of large handsome buildings?—Yes; reserving the open spaces before Whitehall Place, Whitehall, Northumberland House, Somerset House, and the Temple Gardens. These should be converted into open gardens.

934. Making elevations along the edge of the river?—Yes.

935. And widening the streets and removing all that property which is of an humble character, and putting public buildings upon it, or buildings of a greater importance, so as entirely to convert all that which is now used for purposes of trade or for humble purposes into a mass of highly valuable property?—Precisely so.

936. You have arrived at that conclusion, having studied the matter, and believing that the metropolis could afford to give up that situation with reference to its trade exigencies as a situation for trade?—Yes, certainly; and I believe no proposition for improving London, and for making London salubrious, would have a greater effect than making this great street of London, or boulevard, if I may use the expression, and connecting the two ends of it along the river between Westminster and Blackfriars, and connecting the subordinate streets proposed with it, and creating also fine wide streets for residential and other purposes.

937. (*Sir Joshua Jebb.*) As regards the general line of your embankment, have you looked at all at Mr. Walker's line?—Yes.

938. Is that about the general line which you would think judicious?—That is my proposed line. I have reflected on what would be the hydraulic consequence of so placing an embankment of this sort, and enclosing this large proportion of the river, and the conclusion which I have come to is this, that you would create a certain amount of increased scour against the wall and on the bed of the river, but not to any very great extent, because the water would flow in a very tranquil state under the wall; that a scour would also take place in other parts of the river there would be no doubt about it, for instance, there are some shoals below Westminster Bridge; those shoals have been brought about, in a great measure, by blocking the bridge in recent years, but those shoals no doubt would be removed, and I think that the river would be improved; but I am clearly of opinion, that no injurious effect would take place with reference to carrying out a work of this sort, having reference to the hydraulic arrangements which would be made.

939. (*Mr. Thwaites.*) You are referring to the bridges?—Both to the bridges and the river itself.

940. (*Capt. Burstal.*) You say that the shoals below Westminster Bridge have been brought about by the blocking up of the bridge?—Not altogether, but in some degree.

941. What shoal do you refer to?—The shoal that dries at low water.

942. That happens not to be the case. I thought you referred to another shoal, that is a part from the old Middlesex shore, which merely shows itself now because the water is lower?—I had to make a section twenty-five years ago. We did not have such valuable surveys of the river at that time as we have now, and I made a cross section and had borings taken for the Commissioners of the river, and the scour then was not so great as it has been since, and it is that which made me arrive at the conclusion that I have stated.

943. There is another shoal which I thought you alluded to, a bank of silt to the eastward of that mass of piling which is there. You think that when all that piling at the new works at Westminster Bridge is removed the stream of the river will scour away all that shoal?—No doubt but such will be the case.

944. Taking the embankment of the river, according to the line that you suggest, would it, in your opinion, necessitate dredging much in the neighbourhood of Waterloo Bridge for the purpose of improving the navigation?—Yes. I will state my reasons why dredging may be resorted to. Those irregular currents which have taken place will not exist when Westminster Bridge is finished. There are pebble stones which I am satisfied that no current will remove, and so far as the shoals consisting of those larger pebbles are concerned, they would require dredging.

945. Do you think that if the bank above Waterloo Bridge were partly removed it would divert the stream more towards the mid channel of Waterloo Bridge?—It would have a beneficial operation no doubt in that respect, but the pebbles are so large that they never would be removed entirely except by dredging.

946. That would necessarily bring the main stream of the river near low water more towards the middle of the river than it now is?—Yes; it would be desirable to do so.

947. And therefore the stream would not impinge so much upon the embankment?—Precisely. The dredging would exercise an important benefit not only in directing the main current into the mid channel but also deepen the river at the same time. This deepening, if carried on more or less to Teddington lock, would be a most useful work, and the gravel and sand obtained would be available for filling the space reclaimed behind the embankment.

The witness withdrew.

Adjourned.

Monday, 13th May 1861.

PRESENT :

The Right Hon. The Lord Mayor.
Major-General Sir Joshua Jebb, K.C.B.
John Thwaites, Esq.
Captain D. Galton, R.E.
Captain Burstal, R.N.
Henry Arthur Hunt, Esq.
John Robinson M'Clean, Esq.

The Right Hon. The Lord Mayor in the Chair.

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Mr. John Sewell examined.

948. (*Chairman.*) Your plan does not seem to us to be one which would fulfil the requirements of a plan which we are called upon to recommend. We are instructed to examine and inquire into all the plans sent in, and to report upon that one which will best fulfil certain conditions, those conditions being, amongst other things, to provide for the low level sewer, and for the establishment of a new and spacious thoroughfare. That latter condition will not be complied with by a railway, and therefore we will merely ask you briefly to explain your plan?—Such being the decision of the Commission, I should be inclined to limit at present my statement to the memorandum before you. *The same was handed in, and is as follows :—*

"Thames Embankment.

"I respectfully submit that the rapidly growing traffic of London, and the strong desire to divert as much of it as possible to the Thames, renders it unadvisable now to embank the river, and that a railway would give more than the advantages of an embankment without its serious objections.

"The admitted evils of an embankment are sought to be partially remedied by docks, basins, &c., but as a railway on columns would not sensibly diminish the access to the wharves, it requires no such palliatives.

"An embankment would materially lessen the tidal volume of water, which would be a hazardous operation for the future of the river interests below London Bridge. The removal of old London Bridge, and the consequent freer flow of the tide above it, have given nearly two feet of additional tidal water there, to the admitted benefit of the large modern shipping and docks.

"But to limit the tidal area immediately above London Bridge will seriously risk the loss of this additional water, by re-introducing obstructions to the flowing tide near the same place. However, there is no necessity to run any such risk, since both a more capacious thoroughfare than a street one, and also a sewage main can be more economically provided, without any appreciable diminution of tidal area or volume.

"With a regular channel from London Bridge to Chelsea Bridge, the tide would probably flow more quickly to and rise higher than now in the upper parts of the river; so that the result would be the benefit of a greater duration and extent of deep water there than heretofore.

"The embankment would also seriously diminish the stopping or lying ground for barges during low water, and cause their being anchored in the stream, thereby tending to produce river "blocks," and collisions, so much more dangerous than street ones (from the acting power of the tides being sustained); but this scheme would largely increase and greatly improve the "made" or safe-resting ground for river craft, and preserve their sailing space during high water.

"The embankment would at best only accommodate a limited traffic, and convey it to an inconvenient city terminus; but my scheme will not only provide for that traffic, but for the traffic of various railways, including goods, and give passengers a choice of city stations, ending at that best of all city terminal ones, the north end of London Bridge, and may be continued, if hereafter found advisable, to the Blackwall Railway.

"The embankment does not even propose to collect or distribute railway traffic, yet the successful diversion of heavy railway traffic from the streets to the river is most desirable, and would be largely effected by this line and its railway associates on both sides of the river.

"The embankment will require for its construction an income-tax of 9*d.* per ton on all the coal consumed in the metropolitan district during ten years (with the probability of its continuance, or of a rate for maintenance), three fourths of which will fall on the industrious classes having little or no occasion to use the embankment; but the railway will be paid for by those who used or were otherwise benefited by it; whilst by clearing the streets it would restore them to their former business value, and neither requires a coal-tax to construct it nor a rate to maintain it. Indeed, if the coal-tax is to be continued, there are, in my opinion, numerous metropolitan wants to supply to which its proceeds can be far more beneficially applied than to embanking the Thames, since these wants are beyond the scope of remunerative enterprise; such, for instance, as buying up the tolls on the river bridges and on the suburban roads; widening old streets, making new ones, &c.; leaving it to a public company to provide a river thoroughfare, which would at the same time unite all the railways on both sides of the Thames, and a low level sewer as far as that railway extends.

"The proposed Thames Railway and Sewer.

"In 1855, the 'Select Parliamentary Committee' which sat on 'Metropolitan Communications,' with reference to the London passenger traffic of the railways give important statistics, which may be thus classed and tabulated :—

The Five Lines which have City or Suburban Traffic to Windsor, Woolwich, &c.

London Stations. Name.	Number of Passengers. 1850.	Number of Passengers. 1854.	Increase. In Nos.	Increase. Per Cent.
London Bridge (the group)	5,558,000	10,845,000	5,287,000	95
Waterloo (South-western)	1,228,000	3,308,000	2,080,000	165
Fenchurch Street (Blackwall)	—	8,144,000	Not given.	
Shoreditch (Eastern Counties)	—	2,143,000		
Paddington (Great Western)	—	1,400,000		
Giving a Total of	—	25,840,000		

The Two Great Railways which have chiefly Country Traffic.

London Stations. Name.	Number of Passengers.	Increase.
Euston Square (London and North-western)	970,000	Not given.
King's Cross (Great Northern)	710,000	
Giving a Total of	1,680,000	

"The increase in the metropolitan population is estimated at about 640,000 since the census in 1851,

or more than half the increase during the preceding forty years, and there can be no doubt that the population and traffic of London continue to increase with an annually accelerating ratio, and is now 2,803,304.

"The above statistics show that in 1854, out of the 27,520,000 passengers arriving at or departing from the seven London railway termini, 25,840,000, or about 94 per cent. of the whole number, were carried by the five lines having city and suburban traffic, whilst 1,680,000 only, or about 6 per cent., were carried by the two great northern trunk lines, which traverse the heart of the kingdom. This disproportion of 94 to 6 per cent. will also apply to merchandise traffic for the metropolis and its shipping, as compared with that which would pass direct between any two railways, and explains the striking fact, that whilst in 1854 the extensively ramified London and North-western Railway carried scarcely a million of London passengers, the Blackwall Railway carried upwards of eight millions of city passengers. It is, therefore, the city and suburban traffic that is so gigantic and not that between the railways, without stopping or breaking bulk in London.

"After commenting upon the various plans submitted to them for improving the metropolitan communications, the Committee state that 'they feel bound to express the approbation with which they regard those plans which seem best fitted to accomplish the following objects:—First, that of relieving the streets from the heavy goods traffic in transitu between the railways, the river, and the docks; second, the embankment of the Thames; and, lastly, the provision, on a suitable scale, for the accommodation of those great tides of passenger traffic which, with daily increasing force and pressure, are flowing through the streets of this metropolis; and that wherever works improving the communications of the metropolis can be carried out by private enterprise, (as is proposed to be done in this instance,) that course be adopted; and your Committee consider that most important results may be secured in this way.'

"Objects.—The objects of my design are, first, to provide a railway in close proximity with and parallel to the principal obstructed streets from the city to Westminster and Chelsea; second, to provide the northern low level sewer from Chelsea Bridge to London Bridge; and, third, to improve and beautify the Thames, all by private enterprise.

"Route.—I propose to commence the railway at the city end of London Bridge, and proceed near the low-water line of the northern shore of the Thames, under all the bridges, to join the Victoria Station and Pimlico Railway near Chelsea, being a distance of four and a half miles. As first submitted to you, I intended this railway to stop at the Pimlico Junction, but since I was before you the vestry of Chelsea have examined my plan, and pointed out the public and local advantages of including in it the completion of the Chelsea embankment of the Thames to Battersea Bridge.

It appears that this embankment was proposed by Lord Lincoln in 1843, supported by successive Governments and Parliaments granting power to raise 145,753*l.* for its construction, but subject to certain private, and for such a work, unimportant conditions, which have arrested its progress. The funds actually raised for it have, it appears, been otherwise appropriated for Imperial purposes, but are still considered as equitably available for completing the work.

As there is no practical difficulty in thus extending the public benefits of my plan, I very respectfully beg to be allowed to include the completion of the Chelsea embankment therein; to amend my first proposition accordingly, and to have it now registered as a railway of 6½ miles in length, from London Bridge to the West London Railway Extension (now constructing) at Cremorne, a bank above low water for sewage gas or other mains opposite wharves; a bank above high water opposite the Houses of Parliament and wherever requisite, and a northern low level sewer to London Bridge, which can all be made for 1,500,000*l.*, and be a profitable investment.

"Railway Junctions.—All the western lines now extending to Pimlico, and all the southern lines that may yet cross the Thames, can be connected with this one, so that it would beneficially connect and extend them to the City and other railways.

"Stations.—It is proposed to have passenger stations at all the bridges and railway junctions, as well as at other places; to arrange for the free use of the toll bridges for the traffic of this railway; to run trains at suitable hours and low fares for the working classes; and to have an extensive goods and coal station on the ten or twelve acres of spare mud banks at Hungerford Bridge, or at Blackfriars Bridge, properly arranged for general railway traffic. Also steam ferries, where wanted, to cross the river.

"Sewer.—As a valuable consideration for the use of the foreshore of the river, I propose to provide a low level sewer, and also a low level bank, with ample water-way over them to the wharves.

"Construction.—I propose to erect this railway opposite the wharves, upon the well-tested pile system; to regulate its distance from the wharves, the distances between its piles, and the height of the line above high-water for barges to then pass underneath it, by the heights of the arches of the bridges it has to pass under, and the requirements of the wharfingers and other interests.

"For public safety and accommodation, the vast amount of traffic to be provided for will require four pairs of rails, of which two pairs will be for passengers, and the other two pairs for goods and coal traffic, thereby affording the accommodation of two railways conjoined, and sidings for the wharves.

"The sewer will be laid alongside the railway, to be the channel boundary, and rise from four to seven feet above low water, yet have from twelve to fourteen feet of water over it at Trinity high-water mark, being more than is required for wharf craft above London Bridge. It would at the same time form a low level bank, from which the foreshore may be regularly inclined up to the wharves for barges to lie on during low water, with much more safety than they now do upon the uneven ground in front of so many wharves.

"By adding other mains as required, which can be easily be done, and by employing the ebbing tide to flush these sewage mains, any quantity of sewage may thus be conveyed to any given point down the river. For, if the tide now removes the sewage, with all its hindrances to progress, and tendencies to deposit in shallows, eddies, &c., the tide would much more effectually remove it where its ebbing power and velocity would bear directly upon the confined sewage, to make it move on in these mains. A similar bank may be made along the southern or opposite foreshore of the river, with a similar water-way over it, and between them the width of the channel may be regulated to an uniform or other width during the time of the fall of the last four or six feet of the ebbing tide; low water; and the first four or six feet of the rising tide.

"Thus an uniform or other width of channel, with an uniform helght of bank on each side of the river abovelow water, and regular sloping foreshores, would be economically obtained, and effect decided improvements both in the appearance and utility of the Thames.

"Wharves.—Since many wharves have their foreshores divided and protected by piles, it is only a question of detail to so arrange the supporting piles of a railway that they may be an extension of wharf frontages to that railway. For it is obvious that if craft can now pass to a wharf between frontage piles, or pass one with its frontage occupied by a number of barges, and turn in at right angles to the next wharf, the railway piles would at worst be no more in the way than these piles, whilst they would afford

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a protecting frontage to all the wharves that the line passed.

"Taken, however, in connexion with the sewer-raised bed for craft to lie on, the railway would greatly benefit the wharves, irrespective of the ease with which sidings could be carried into the warehouses, or along the streets (to be worked by horse-traction) to other warehouses. At the narrowest part of the river, near Southwark Bridge, as much or more space than the 'campshed,' or raised craft beds, at the City of London Brewery and other wharves, can be left clear between the railway and the wharves. The average width of this space between London Bridge and Blackfriars Bridge is about 150 feet, varying from 100 feet as a minimum, at Southwark Bridge, to 220 feet at Horseshoe Wharf, nearly opposite St. Paul's. From Blackfriars Bridge to the Temple, the space is about 140 feet in width all the way, thus affording ample space for craft in front of the wharves, both above and below that bridge.

"The proposed railway and sewer, it is quite clear would not injure, but, on the contrary, greatly benefit wharf property on both sides of the river, by placing it in direct communication with the principal railways of the country.

"Temple Gardens.—The space of about three acres between the railway and the present Temple Gardens may be filled up, and form land of much value, or left open.

"In like manner the intervening space from Whitehall Gardens to Westminster Bridge, of about 9½ acres, to the railway, may be filled up, and become a valuable property, or it may be left open.

"At the Houses of Parliament also the river promenade of the houses may be extended to the railway, and rather add to than detract from their appearance, or that of Westminster New Bridge. Indeed, by using the reclaimed foreshore and wharves west of the Houses for the new Courts of Justice, and the reclaimed foreshore and wharves on the east side of Westminster Bridge for the new Government Offices, a great and desirable improvement would be effected there.

"As to Cost, it is expected that in consideration of the great public advantages which this scheme would afford, the use of so much of the foreshore of the river as will be required would be conceded to a company, so that comparatively little property would have to be purchased for this undertaking.

"At London Bridge, for instance, the existing steps on each side afford excellent ingress to and egress from the station; whilst at other bridges, stairs from the nearest piers to the railway would be cheaply and conveniently constructed for both railway and steamboat passengers. Indeed, when fairly considered, it becomes obvious that great facilities exist for constructing a railway along the northern foreshore of the Thames, for 6 miles, which would confer direct benefits on river interests, and may be made an ornament to the metropolis.

"As the claims for compensation would necessarily be limited, where benefits and not injury are generally conferred on the interests concerned, the cost of the railway and the sewer is estimated at only 1,500,000*l.*, being chiefly for construction.

"Traffic.—The impressive testimony of the overcrowded Strand, Fleet Street, Ludgate Hill, and Cheapside, and the constant stoppage and danger to which foot passengers crossing have to submit, clearly prove that this is not a case of want of traffic, but want of means to convey that traffic, and that under good management several millions of passengers, and many thousands of tons of goods and coals, would be annually accommodated by this line, to the great relief of the streets and benefit of the public.

"An official city return shows that during the twenty-four hours ending at 6. P.M. on the 17th March 1859 the traffic over London Bridge amounted to 20,444 vehicles and 167,910 passengers, or equal to 50,130,000 passengers and 6,133,200 vehicles annually, after deducting sixty-five days for Sundays, holidays, and other contingencies. Truly immense as is this traffic by one southern avenue, it will be considerably exceeded by that of the western avenues which converge in the city. The river passenger traffic alone is estimated at upwards of 100,000 daily during several months of the year, out of which, probably, one half are city passengers. Now, if London Bridge can annually accommodate fifty millions of passengers and upwards of six millions of street vehicles, it indicates the amount of traffic which the proposed railway may, under good management, accommodate.

"Revenue and Dividends.—The revenue, even at moderate fares, can scarcely fail to be large, and yield an ample dividend to investers, provided that the scheme is not fettered by hard conditions, but is left, like any other railway, to develop its own resources, for its own benefit and that of the public. Moreover it will require no coal tax or rate.

"This undertaking may therefore not only fairly claim the active support of the various river interests concerned, but it may also claim a moiety of the gain it would be the means of bringing to these interests. I therefore submit that this railway, with the Thames as its powerful auxiliary in clearing the streets, has much superiority over a short Thames road, street, or railway combined with one of them, and that no Thames thoroughfare that does not directly utilize the vast carrying power of the Thames and the railways, can give the same amount of metropolitan and railway benefits that can be given by this one, central as it is to both sides of the river and railways, from London Bridge to Battersea.

"It is evident that a self-supporting undertaking has many important public advantages over a tax-supported one, with or without the extensive building operations that are attached to it as a source of raising funds. Also, that as the proposed railway would improve and ornament the river, be a benefit to wharfingers and other river-side interests, and be an effective clearer of the over-crowded streets, it fairly solves the old problem of a new river thoroughfare, and the modern one of a low level sewer, in an economical and satisfactory manner.

"Map and Drawings.—The map shows the route of the proposed railway, and indicates how the sewage mains may be laid to an uniform or other width between them, to form a four or six feet deep channel of tidal water besides the water, of the river itself.

"The drawings show,—first, transverse sections of the Thames near its narrowest part; of the proposed railway, with four pairs of broad and narrow gauge lines on it; of the sewage mains on each side of the river, and of the slopes or beds to the wharves; secondly, a longitudinal elevation of the railway (which may be highly ornamental) and of the improved foreshore, which at low water would have a good appearance, independent of its utility for craft to lie on;—and thirdly, a perspective view of the proposed railway passing the Houses of Parliament and Whitehall Gardens, also showing a part of the proposed goods depôt at Hungerford Bridge."

I may explain the drawings now before you. This (*pointing to it*) is a large plan of the river Thames, showing the proposed railway on the scale of five feet to a mile, following the river all the way to join the Pimlico and Crystal Palace Railway near Chelsea Bridge; but now (at the instance of the vestry of Chelsea) proposed to be extended by the river to the West London Railway Extension at Cremorne, a total distance of 6½ miles; and in doing so to complete the long authorised Chelsea embankment to Battersea Bridge, at a cost of 1,500,000*l.* It will not interfere with the water ways to the wharves, with the exception of those near the Houses of Parliament; which I propose the railway company might buy up, reclaim the land in front of them, and sell what was not required for the railway for public edifices. The line would be too low there for access to the wharves, but be a right height for the utility and ornament of the locality. This is a perspective

view of the proposed line passing the Houses of Parliament and Whitehall Gardens (*pointing to it*). At present there is a coal wharf immediately adjoining the houses on the west, then a stone wharf, next a coal wharf, followed by a timber wharf. I think that those wharves, and others, if required, might be bought by the company, and with the reclaimed foreshore, be sold at their cost for government buildings. In the same way on the east side of Westminster Bridge, as far as Richmond Terrace, 2¾ acres would be reclaimed in front of those wharves, and in addition to the shore property bought, (after allowing for a station) be similarly sold at cost price for national edifices. These sites are marked on the large map now before you; and on the western site, the Courts of Law may be most conveniently and appropriately erected; whilst on the east side of Westminster Bridge the Government offices may be as appropriately located. The highest architectural skill may be employed to cover these eight or nine acres with national buildings, having Westminster Palace as the centre of the group, and this railway as their requisite and ornamental thoroughfare. Those mud banks between Hungerford Bridge and Waterloo Bridge might be used for a goods station, though at Blackfriars Bridge there is a much better situation for one between Puddle Dock and the City Gas Works. This line might afterwards be extended from London Bridge to the Blackwall Railway, if required, with a gradient of 1 in 60;—the distance is only about half a mile.

949. (*Sir Joshua Jebb.*) Would you cross the river at London Bridge?—We should join the line of the London, Chatham, and Dover, at Blackfriars Bridge, and the line of the South-eastern at Charing Cross. If the Hungerford mud bank were reclaimed, it would be an excellent place for buildings, and the goods department may be confined to each side of Blackfriars Bridge.

950. (*Captain Galton.*) Do you interfere with the bed of the river?—Only by the low level bank for sewer, or other mains.

951. Should you dredge outside that?—No; not more than will be required for the foreshores and higher banks, as there would be scouring power created by confining the ebbing tide, as proposed; which would, I think, be sufficient to keep and deepen the channel.

952. You raise the sewer above the level of low water?—The lowest point of the sewer is rather above low water, so that it can be got at at that time, and be flushed by the ebbing tide.

953. Between the sewer and the land, what do you do?—I would make the foreshore incline up to the wharves by gravel dredged from the shoals in the river.

954. For the barges to rest upon?—Yes; which some few wharves have now.

955. (*Mr. Thwaites.*) Do you propose a brick sewer?—No; cast-iron sewer mains, which may vary in size as required.

956. One sewer?—No; two or more. Mr. Bazalgette proposes one of 7 feet diameter, near London Bridge. I propose two, of ample capacity there, subject to variation, as their continuation by the river, or by a street sewer, might determine.

957. What would be the capacity of your sewers?—Four feet six internal diameter, to begin with.

958. That would not be equal to 7 feet?—We could increase them at any point where any large street sewer came in. I propose to begin with one at first, and increase them without increasing the height above low water more than 7 feet at London Bridge, as is shown by this drawing (*pointing to one*) of six river mains laid side by side in the low level bank and separately connected with 12 street mains. It is merely a question of the quantity of sewerage, however large, and the distance to take it, to regulate the number, size, and form of the mains required, provided that you limit their vertical height above low water to leave the requisite water over them to the wharves, both above and below London Bridge. On the southern foreshore a similar low-level bank may be made for sewage, gas, or water mains all more easily got at during low water for repairs or additions than street mains.

959. (*Captain Galton.*) What fall would you give the sewer?—The natural fall of the foreshore of the river, however little, is of no consequence; for when the tide begins to fall you have a rapid current due to its own declivity of 12 to 18 feet in a few hours twice daily, and by admitting the tide to enter the mains at their upper ends, the whole force of the current due to that fall becomes available to keep the mains clear, even where they dip to pass dock and similar entrances below London Bridge.

960. You would admit the water into the sewer?—Yes, and run out it to the lower end.

961. You go to London Bridge?—Yes, with the railway; and I propose that the railway company should take the sewage there, and that the Metropolitan Board of Works should continue it into the street sewer, or by the river, for distribution therein, at separate points of discharge as may be most advisable.

962. Supposing that were done, could you run the tidal water through the sewer?—Yes. It could be easily let in and out by the ordinary tidal doors—a simple mechanism worked by the tides.

963. Running it into the river at London Bridge?—At the points selected. It is only a question of cast-iron mains to separately collect and separately distribute the sewage in the river at well chosen distances apart, to render it inoffensive to any locality, as has been shown by eminent witnesses before Parliamentary Committees on this subject. The goods line next the wharves would be principally used during the day as standing room for waggons for the wharves, while the outside line would be used for passengers. There are 50,000,000 passengers and 6,000,000 vehicles passing over London Bridge, annually, and with a four-pair railway of this class we could easily accommodate a much larger traffic. This is a view of the proposed railway opposite the wharves, or where it is required to be on columns, and it might be ornamented in any other way, (*pointing to an elevation*). This is a bird's eye view of the railway passing under the bridges, and the improved foreshores on both sides of the river from London Bridge to the Houses of Parliament, with a regular channel between the two low-level tidal banks. This (*another drawing*) shows a transverse section of the low-level banks, with six mains in each bank, the tidal channel of six feet deep above low water, between these banks, the railway on the northern side at an average distance of 140 feet from the wharves and the sheet-piling on the channel sides of the banks.

But as appropriate illustrations of my scheme, I beg to place before you a copy of the prospectus and designs for a high-level embankment, by the late Sir F. Trench, published in 1825, under the auspices of the highly influential committee named therein.

The principles of improvement by private enterprise embodied in that prospectus, and in the Report of the Select Parliamentary Committee of 1855, I have taken as my guide, and I believe those conversant with railway experience will agree with me that my plan would be a profitable one, and be a most valuable addition to the metropolitan thoroughfares.

The excellent elevations for the lower portion of Sir F. Trench's structure in passing the Temple and Somerset House I wish the Commissioners to examine, and to consider them as equally applicable to my scheme in passing all the more important places on the route.

These plans, it will be seen, originate most of the subsequent high-level ones; but the defects inherent to the class have, and would, I believe, still lead to their failure unless supported by taxation, which can be much better employed on other works.

But by limiting the Thames improvements to prac-

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tical objects, which can be effected by a company, the cause of failure is removed, and the proceeds of the coal-tax may be simultaneously employed on other metropolitan improvements.

I may add that the structure I propose is equally available for a a roadway or for a railway, or for both combined; but that as I consider it would only be profitably made by a Company as a railway, I have restricted my plan accordingly.

The witness withdrew.

Sir W. Worsley, Bart., M.A.

SIR WILLIAM WORSLEY, Bart., M.A., examined.

964. (*Chairman.*) Will you describe your proposal to the Commissioners?—I beg to say that I have proposed two plans; one was brought out when the Metropolitan Local Management Act was introduced, which I thought would fully meet the main requirements of that act, and I proposed a subsequent alternative plan two years ago. I conceive that your enquiries are at present in some degree limited to certain details; and being limited to such details, I do not feel quite sure as to what latitude I might be allowed to take in giving my evidence. It is not my object to occupy the time of this Board unnecessarily; but I should wish to refer to those points which I conceive to be important in the matter. With a view to approach the present inquiry more properly and efficiently, as I conceive, I will just notice the different circumstances which have occurred since the passing of the Act in question, as, without referring to them in my own mind, I cannot very well approach the present questions in a satisfactory manner. On the publication, in May 1856, of the objections I had raised to the metropolitan scheme of drainage, their outfall plan was suspended. My views were noticed in some of the daily papers, amongst others the "Lancet," which said that my suggestions were right in a medical point of view, but impugned them in reference to the river. The remarks of the "Lancet" were quoted in other papers, the "Morning Herald," for instance. I published a reply to the "Lancet" in the "Herald" in December 1856, showing the mistake the "Lancet" had made, for that, besides other points, my scheme could not fail to benefit the shipping interest. The "Lancet" acknowledged their mistake in a subsequent number. I then published three other pamphlets on the main drainage in the "Morning Post," which were not impugned at all, that I am aware of. The Metropolitan Board being still at fault, referees were appointed, and my views generally, as well as my evidence taken by the referees in May 1857, were given in their report. This report named much more distant outfalls, and the Metropolitan Board virtually adopted such report. I had however shown that the principle of such distant outfalls was equally at variance with my views as to the hydrodynamic action of the river. Mr. Goldsworthy Gurney was next instructed to report on the Thames, and his report was published by order of the House of Commons in December 1857, and upon its being kindly sent to me by Mr. Gurney, I wrote to that gentleman, showing that he had entirely established my hydrodynamic views. My letter was published, with Mr. Gurney's permission, in March 1858. A Select Committee of the House of Commons was next appointed in that year, to consider such report, among other things, and an immense mass of scientific evidence was adduced. The labours of the committee were however prematurely cut short by the passing of the Amendment Act, which was purposely meant to give additional powers to the Metropolitan Board for purifying the river, by striking out the veto in the Metropolitan Local Management Act given to the First Commissioner of Works. It turned out, however, that the Admiralty enjoyed an equally stringent veto in the new act, so far as related to works on the Thames below high-water mark. Under these circumstances I published two additional pamphlets, one in 1858, and the other in 1859, setting forth in the first my lesser alternative drainage plan, which I had purposely kept back till then, and also showing that the new act was not likely to answer the end in view, and in the second my decided objection to the Admiralty veto. My larger plan, which was first brought out, I assume to be laid aside, and therefore it is the lesser plan of embankments, with culverts built into them, combined with such advantages as can be obtained by reclaiming a certain portion of land on each side of the river with a view to afford greater facilities for passage and traffic. That constitutes the basis of my lesser plan, which I may say is more a principle for embankments than any architectural or brick-laying plan as to what the embankment should consist of. At the same time I have in view what has been done at Bristol and other places. The embankment should consist of quay walls, having steps, pillars, lights, and so forth. I do not pretend at all to indicate in what particular style the quay walls should be made, but simply that there should be a margin taken up from the side of the river of sufficient width, so that in place of breaking up the Strand and Fleet Street for the main culvert, as was proposed by the Metropolitan Board, there should be sufficient space reclaimed from the margin of the river to give the necessary width for this culvert, and at the same time to give greater convenience for passage and traffic. Having observed the unpleasant state of the Thames for many years, and paid a good deal of attention to intercepting drains, and having occasionally sat as chairman under a local drainage act, and also, as a Commissioner of one of the harbours in the north of England, carefully considered tidal action in different harbours, and noticed the various enquiries which have arisen in reference to the Thames, and which have gone on for these last six years without coming to any satisfactory result in regard to the Thames embankment and purification (which I conceive should be blended together), I have been led to the conclusion that this delay was owing to three or four circumstances. There has been a difficulty, no doubt, in regard to the distance at which outfalls should be made. That was one great impediment. Then there was another impediment from the fact of the Admiralty having a veto against taking up or diminishing in any way part of the tidal area. I happen to have had some correspondence with a gentleman in the Admiralty, showing that that was the prevailing opinion—a great objection to reduce the tidal area. Now, inasmuch as you took up land on each side of the river for these embankments, you must necessarily reduce the tidal area; and that being the case, it seems to be necessary that you should decide, or that somebody should decide, to what extent the embankment should be projected into the river. If you allow, say 200 yards, for the width of the river, you would then get perhaps sufficient width of embankment to do what is requisite, and also to allow sufficient accommodation for the shipping; for I suppose that the shipping must be attended to as well as the drainage. If you allow 200 yards for the water-way, you would perhaps get a sufficient margin on each side for the warehouses, roadway, &c. Then there is another difficulty. There was also the question who was to pay for it. There seemed to be great diffidence on the part of the Metropolitan Board as to laying on a sufficient tax for these improvements. The Government considered that they ought to be paid for by the metropolis, and that they did not constitute an exceptional case at all. Therefore there were three or four impediments which operated to prevent the contemplated improvements being carried out, and it may become a question what other impediments there will be. I need scarcely remind gentlemen here that the Government have re-

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linquished their claim to the bed of the river to the corporation, upon trust, the corporation being bound to pay them a third of the value of such land as is reclaimed, and to lay out the remaining two thirds upon the improvements of the banks and the bed of the river. Therefore, if these embankments are made, and you reclaim a certain portion of the land by your embankment walls, I suppose the corporation would come in and say, this land belongs to us, we must take it, and do what we like with it. And therefore there is not only this difficulty with the Admiralty and the Government, but the difficulty with the corporation. And so it seems that these difficulties and impediments have operated to prevent anything being hitherto done. Though a vast amount of evidence has been taken, yet after six years nothing has been done. The question then now is, if all these difficulties are solved and set aside, and got over, and the embankments are made, what improvements will be obtained by these embankments, and this new system of intercepting drainage (which I believe I was the first to suggest as opposed to the Metropolitan scheme) ?—what improvement will result to the river in purification, and to the drainage, and to the convenience of the shipping ? I fancy that if they were properly made great improvements would ensue ; but I am thoroughly convinced that the purification of the river can ever be achieved by contracting the current of the river into a uniform course, especially if it is narrowed much, because, according to the evidence which was given before the Select Committee, nearly all the meetings of which I attended, the more you narrow the current into a uniform width the more you stir up the noxious matter and bring it to the surface, and in consequence of its being brought to the surface the decomposing effect of the atmosphere acts upon it, and therefore, inasmuch as you accelerate the current by reducing the width and confining the channel of the river within uniform walled embankments, you will necessarily have a greater degree of effluvium; and besides that you would not get any very great benefit to the shipping interest, unless you could, in some way or other, make such an alteration as would enable the shipping to come up to the embankment quays, always, at high-water mark, or nearly at high-water mark, as has been done at Bristol. I have always understood that in harbours and tidal rivers the great thing was to get high tide, and therefore I suggest that there should be a constant high tide kept up by the tidal dam principle; and I conceive that you could not by any other principle ever achieve the double effect of good conveniences in a commercial point of view and the purification of the river, because as long as the hydrodynamic action of the tide works upon the bed of the river with a preponderating force upwards, so long you will have the noxious compounds stirred up and brought to the surface. I feel satisfied that the river is worse at high water than at low water. I went down on one of the hottest days at low water, on purpose to satisfy myself upon that point. Near Searle's, at Westminster Bridge, I found that at low water there was comparatively but very little smell in the bed of the river, though it was hot weather,—nothing at all comparable to what takes place at high water; and Mr. Searle informed me that at high water the effluvium was so bad that he was obliged to remove his family out of town, being afraid of the injury that they would sustain. You will perceive, therefore, that my lesser alternative plan simply indicates that which I have always maintained, that there shall be embankment quays, and that there should be drains built into them, and that there should be flights of steps, and piers, and lights, and so on, doing away with the rotton wooden wharves which now exist. Setting aside my larger plan, I have always considered that my lesser alternative scheme now referred to would be the one most likely to ensure the convenience of the shipping, a pure river always at high-water mark, and those sanitary and social advantages incident to such a state of things. I consider the principle of tidal gates to be now well understood; it has been adopted both at Bristol and at York, both of which places I have examined. That principle is, in fact, so well understood that it is clear there can be no difficulty whatever in regard to commerce. I need not perhaps explain to the Commissioners the difference between a tidal gate and a lock. It is simply that, instead of raising vessels up and down as in an ordinary canal, you wait till about high tide, and then the high tide opens the upper gate, and by means of a steam tug you bring through in the course of a few minutes almost any number of vessels ready to come through, and they go out with equal facility. The double gates are placed facing outwards. The extent of ground which would be reclaimed from the river side is certainly a matter of very important consideration. When I was examined before the gentlemen who were referees under the government for the drainage report, I should at that time, had they pressed me upon the subject, have stated that my calculations showed that by contracting the river to a uniform width of 200 yards within the embankments you would set at liberty and reclaim 800,000 square yards of ground, which, without going into any of the extravagant prices which have been given for land in different places, but taking a moderate computation, would be worth 7,000,000*l.* or 8,000,000*l.* Therefore the question of how much ground would be taken up by your embankment is an important question ; and it is also an important question who is to have the expending of the money ; whether it should be done by the Government, the Corporation, or the Metropolitan Board, or jointly. I have always been of opinion that they should jointly undertake it. I do not say that the river should be contracted exactly to a uniform width of 200 yards. No doubt 200 yards would make a handsome looking river, and would, probably, be now quite sufficient for the navigation which goes on, especially above bridge ; it would be, I should think, a very ample space. The river, it must be borne in mind, would always be up at nearly high-water level, and would be always filled with down river water; so that in a commercial, sanitary, social, and ornamental point of view, the change could not fail to be highly beneficial; in fact, you would have a beautiful high tide clear pellucid commercial lake through the metropolis the whole way down to Blackwall, or wherever the tidal dam was placed. I can hardly say how far the embankments would be available for railways. There would be such conflicting interests, vessels coming and landing things at right angles to the railways, that it would be very difficult to carry it out, unless there were some difference of elevation. My plan is a a simple one. I go upon a principle which has been introduced for the last half century with great success both at Bristol and at York. York is a town as sweet as Scarborough ; there is a clear pellucid river through it, and vessels of equal tonnage with those which formerly navigated this river come through the tidal lock-gate with great facility ; there is no extra silt or any evils whatever arising from such tidal dam ; and that has been going on for 80 years with perfect satisfaction. I have now only to request permission to leave my explanatory pamphlets, in addition to my drawing, &c., already laid before you.

The witness withdrew.

Mr. T. Page.

13 May 1861.

Mr. THOMAS PAGE examined.

965. (*Chairman.*) Will you describe your plan to the Commissioners?—

Eighteen years have elapsed since the inquiry on the Thames Embankment was proceeded with by Her Majesty's Commissioners* for Metropolis Improvements, appointed 23rd November 1842.

Plans were submitted to them by Messrs. Walker and Burges, the late Mr. John Martin, the late Sir F. Trench, the late Sir C. Barry, and myself, and after a long and patient investigation the Commissioners came to the following resolution:—"That by "the adoption of the general principles of embank- "ment presented in the plan of Mr. Page, or Plan B., "(with certain modifications which have been sug- "gested, and others which may be suggested here- "after), there is reason to expect that the great "public benefit of the improvement of the river, and "the obtaining a new line of communication, may "be acquired without detriment to the trade now "conducted on the Middlesex shore."†

The Government approved of the recommendation of the Commissioners, the Parliamentary plans were deposited, notices given, and arrangements made for obtaining the sanction of Parliament for the execution of the works, but the opposition to increased coal dues caused the proceedings for this great public improvement to be abandoned.

The plan to which the approval of the Government was given to be brought before Parliament, is that which I forwarded to you on the 8th ultimo. It was also laid before the Committee of the House of Commons on the Thames Embankment, 1860, of which Sir Joseph Paxton was chairman, but, strangely enough, was not printed with the other plans in the appendix to their report.

The plan and sections which I have the honour to lay before you differ in a very slight degree, with reference to the embankment itself, from the plan approved by the Government in 1844.

That ample data were afforded by the conclusions of the Commissioners of 1842, will be seen by the appendix to their report. In it there are 44 sections of the river, made under my direction, extending from Vauxhall Bridge to below Blackwall. Below London Bridge there were 23 transverse sections corresponding with the line of soundings made by Capt. A. M. Shields, in 1796, and presented to the London Dock Company by the late Mr. Vaughan; and above London Bridge there were 21 sections on the lines of the late Mr. Giles's soundings, made under Mr. Telford's directions, in 1823, for the Committee of the Bridge House Lands. Thus the sections below bridge allowed a comparison of the depths of the river between the periods 1796 and 1843, 47 years apart, and those above bridge between 1823 and 1843, 20 years apart.

Besides the 44 transverse sections and the longitudinal sections, very careful soundings were made in the waterways of the several bridges, viz., Westminster, Hungerford, Waterloo, Blackfriars, Southwark, and London Bridge and sections were given, showing their foundations and the comparative levels of the bed of the river during the previous 20 years.

I may here mention that these sections warranted me in predicting the inutility of attempting to maintain old Westminster Bridge; and it is a singular circumstance that six weeks after my third letter to the President of Her Majesty's Commissioners was printed, one of the repaired piers of that bridge sunk seven inches, the voussoirs of the adjoining arch began to drop out of place; the traffic was stopped, the roadway was lowered to lighten the bridge, but the progress of the repairs was concluded.

Besides the sections of the river, I laid before the Commissioners a series of tidal observations made at Sheerness, in the great estuary of the Thames and Medway, and at St. Katharine's Docks. These observations gave the first explanation of the tidal action of the River Thames, and showed that instead of the tide rising *two feet* at London Bridge above the level of high water at Sheerness, as stated in Mr. Walker's report to the Thames Navigation Committee in 1842, it rises from 3 to 5 feet above that level; and further comparison between the tidal tables for Sheerness and the London Docks (which, with those at Chelsea Waterworks, were obtained and printed by Her Majesty's Commissioners with their report of May 1845), shows that at times the low water in the Pool falls from 1 foot to 2 feet below the same low water at Sheerness.

In one of the tables in the appendix is also given the experiment with a float, showing the extent of the run of the ebb tide, starting from Hungerford Bridge, and the return of the flood; an inquiry which was subsequently pursued by me with floats in the lower part of the river, with reference to a plan for the sewerage of London, and from which I deduced the conclusion that the sewage if discharged at Erith when the tide had fallen 10 feet below Trinity datum, would not return again above Woolwich. These observations were made prior to the experiments by the Commissioners of Sewers.

The measurements of the wharves between Vauxhall Bridge and London Bridge, the account of their appropriation, the measurement of the depths of the mud on the shores of the river, and the measurements of the sewers, were all made and are given in the appendix to the report of 1844.

I may here mention that, in 1856, a valuable set of soundings of the river and a report was made by a member of your Commission, Capt. Burstal, which afford the means of comparing the depths from 1823 to the above-named date.

The principles of my plan were based on the requirements of the wharfingers in connexion with the desiderata for a public carriage way and promenade, and the interests of the river as a port, which last it is to be hoped will have due weight in every inquiry on this subject. It was evident that the plans for a solid embankment would involve such an amount of interference with the wharfingers as would render it necessary to purchase most of the property, while the conversion of so much water area into land would prejudicially affect the scour of the river in the pool. All considerations led to the conclusion that a *detached embankment* would be the least objectionable and would be best adapted for the various interests. A detached embankment, therefore, between Millbank and Trig Lane on the left shore, and a parallel line of embankment on the Surrey side, leaving the side channels for wharf purposes, was the essential feature of my plan, as shown on the drawing now laid before you. I had had measurements made of all the wharves, an account taken of their appropriation, the

* The Commissioners, as named in the Commission, 23rd November, 1842, were Henry Pelham Pelham-Clinton, commonly called Earl of Lincoln; George William Lord Lyttleton; Nicholas William Lord Colborne; John Charles Herries, John Humphrey, Sir Robert Harry Inglis, Bart., Sir Charles Lemon, Bart., Henry Thomas Hope, Henry Galley Knight, Alexander Milne, Charles Alexander Gore, Sir Robert Smirke, Charles Barry; Trenham Walsham Phillips, Secretary. The Lord Mayor being a member in each case *ex officio*.

† To two of the authors of plans the greatest credit is due for the talent and perseverance which they exhibited in perfecting their ideas and enlisting the public feeling for the embankment, viz., the late Sir F. Trench, and Mr. John Martin who, to his genius as a painter added those essential qualities which would have made him a great engineer.

* I was, and am, indebted to the present Under-Secretary at War, Sir Benjamin Hawes, then member for Lambeth, and one of the Committee of the House of Commons on the Thames Embankment Bill, for tersely describing the conditions to be fulfilled, viz.:—"To devise a plan which would equalize the width of the river, provide a public carriage way and promenade, and not interfere objectionably with the wharfingers."

nature of the trade, the number of barges, floats of timber, &c., and had provided for nearly all the requirements.

With the information before them afforded by the projectors of plans, the Commissioners selected the plans of Messrs. Walker and Burges (A); the plan proposed by myself (B), and the plan proposed by Sir Charles Barry (C), and submitted them with a set of questions to the Hydrographer of the Admiralty (the late Admiral Beaufort), and to the under-mentioned engineers, viz., the late Mr. Jesse Hartley, Sir William Cubitt, Mr. Lewis Gordon, the late Mr. Rendel, Sir John Macneil, Mr. George Rennie, and the late Mr. Giles, whose opinions are given in the appendix to the Report of the Commissioners. Two of the referees, Sir W. Cubitt and the late Mr. Rendel, proposed modifications in my plan, forming the side channels into docks.

On due consideration, the Commissioners concluded to limit the proposed embankment to the Middlesex shore of the river between Westminster Bridge and Blackfriars Bridge, to provide for a promenade between Westminster Bridge and Scotland Yard, which should join the detached embankment opposite Whitehall Place, to raise the general embankment to the level of twelve feet above Trinity high-water line, except opposite the Temple gardens, and to join Chatham Place, Blackfriars, at a level of 16 feet 8 inches above Trinity datum.

The changes made by the Commissioners in the lines of the embankment, as shown on my plan, were to run it through the second arch of Waterloo Bridge, and to limit its projection to the first arch of Blackfriars Bridge.

They also proposed that the space between the detached embankment and the shore should be filled up solid in front of Whitehall Gardens and the Temple Gardens, and also to a length of 270 feet adjoining Westminster Bridge.

The consideration which I have given to the subject during the last eighteen years has strengthened the approval I gave to the change in the line suggested by Her Majesty's Commissioners.

I have referred to the modifications of my plan suggested by Sir W. Cubitt and the late Mr. Rendel, in 1843, copies of which I lay before you. Sir W. Cubitt proposed a solid embankment from Westminster Bridge to the east end of Fife House, with an open dock below the Board of Control. Mr. Rendel, a solid embankment from Westminster Bridge to the same point, Fife House. Neither proposed any access for the public along this part of the line. Both advanced the line to the second pier of Waterloo Bridge, but while Sir W. Cubitt's line corresponded with the second pier of Blackfriars Bridge, Mr. Rendel's line ran to the present abutment of that bridge, advancing the wharves to the embankment line.

In Sir W. Cubitt's plan the roadway was to rise to the level of Waterloo Bridge, crossing the roadway of the bridge at right angles, then descending to the Temple Gardens, and then rising again to Chatham Place, Blackfriars. Mr. Rendel, on the contrary, proposed that the carriage-way should be raised to the level of the bridges on piers and arches, built on a line of wharves on a detached embankment 120 feet in width, the spaces within being filled solid from Waterloo Bridge to Norfolk Street, and in front of the Temple Gardens.

I have thought it right to give this explanation of the modifications proposed in my plan by the two eminent engineers I have named, and to state my opinion, that of these two Sir W. Cubitt's plan was best for the river, while Mr. Rendel's was best for an enlarged and increasing trade, with the elements of a self-supporting plan for the wharf embankment, but not for the carriage-way, the elevation of which would shut out the river from all the streets upon the line.

It is not my province, perhaps, had I all the plans before me which have been laid before the present Commissioners, to discuss them individually; but I may state an opinion, which I am sure will accord with that of many of the members, that, provided the objects in view can be attained, the less interference with the river and with the existing legitimate interests on its banks, the better; that uncalled-for solid embankments should be deprecated as injurious to the interests of the port of London; that where it may, from the nature of the property, be advisable to recommend them, they should contribute to the enjoyment of the public as far as may be consistent with the rights of the owners and occupiers of the present frontage, and that the plan which you may recommend, or the principles on which a plan may be based, should be such as would for ever prevent encroachments on the breadth of the river without regard to the public welfare.

With my third letter to the Earl of Lincoln (Duke of Newcastle), President of the Metropolis Improvement Commissioners (dated 1st July 1843), I presented a plan of the river in the 17th century (copy of which is herewith appended), marking the successive encroachments on the river by partial embankments. Reference to this will show that the embankment made in 1767, in connection with the Blackfriars Bridge, 2,560 feet in length, advanced into the river to an extent, at Whitefriars dock, of 200 feet, that the embankment in front of Arundel House and Gardens, 700 feet in length, advanced 60 feet into the river; the embankments for the present Somerset House and Savoy, making an aggregate length of 950 feet, advanced into the river from 50 to 110 feet. The embankment for the Adelphi in 1770, a length of 800 feet, projected from 90 to 120 feet. The embankment for Hungerford Market Wharf, 230 feet in length, projected 140 feet. The embankment at Scotland Yard and Fife House, 340 feet in length, projected from 30 to 100 feet. The embankments at Whitehall Gardens and the Old Bowling Green, 850 feet in length, projected from 60 feet to 100 feet. The embankment for old Westminster Bridge, and parts adjacent, 500 feet in length, projected from 30 to 100 feet; and, lastly, the embankment in front of the old Houses of Parliament, 1,030 feet in length, projected from 70 to 150 feet, while the recent embankment for the present Houses of Parliament, nearly 900 feet in length, projects before the last line from 80 to 100 feet. This brief notice of the successive encroachments on the river, and a reference to the plan itself, afford convincing proofs of the importance of an uniform line of river frontage which cannot be subject to further change.

Since 1843, when modifications of my plans were suggested by Sir William Cubitt and the late Mr. Rendel, various projects have been put forward, all based upon my plan, all based upon a detached embankment. The late Mr. Gisborne, Mr. Fowler, with Messrs. Fulton and Hemans, Mr. Bidder, Mr. George Robert Stephenson, Mr. Bazalgette, Mr. Bird, and others have proposed plans based on a detached embankment, many of them proposing to abstract from the river considerable water area, and not only to convert it into land but to lay it out for buildings; but whatever be the modification of plan and appropriation of site, whatever be the width of the carriage-way and promenade proposed by various projectors, the origination of the principle rests with me.

In 1843 a carriage-way and promenade were required, and the detached embankment provided for them, taking a width of 50 feet; you may, for a growing population in a locality affording few places for public recreation, determine it desirable to increase that width. In the plan now brought before you I show a width of 70 feet, providing for footways, tramways for heavy traffic, and carriage road for light traffic. I think less would answer the object, because the whole traffic over Westminster Bridge is provided for by tramways and carriage ways 34 feet in width; but it would be for you to determine the width.

In 1861 an intercepting sewer is required to avoid

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the *expense*, the *delay*, and the risk to property by driving a tunnel sewer under the Strand and Fleet Street. Nothing is more simple and easy than to provide for and construct the sewer, as shown on the plan and section now before you. It is a work quite distinct from the embankment, for it may be placed, as I described before the Committee of the House of Commons in 1859, in the foreshore of the river between the wharves and the embankment, and there I have shown it on the section.

To execute this work in the least time and at the least expense, I should suggest that the lower half of the circle should be formed of concrete, made with Portland cement and gravel; that the excavation being formed with sloped sides; a semi-circular iron mould should be slung and fixed at the proper height, and of a diameter 18 inches greater than the finished sewer, to allow for a lining of very hard bricks. This mould being in place, the concrete would be shot in on both sides, and the lower half of the structure rapidly completed; the 9-inch lining formed, and the remainder of the sewer, the sides and crown above the centre, built in brickwork.

As the modes of construction in all engineering works must depend upon the circumstances under which they are formed, it will be evident to the Commissioners that in all situations where water is to be dealt with this mode of proceeding possesses very great advantages, as it would not be requisite to pump the water as for brickwork, it would be done with great rapidity, and an excellent and economical sewer would be secured along the shore of the river. The whole could be so arranged that the excavation for one length of sewer could be filled in immediately over the crown of a previous length.

I need scarcely observe, that the adoption of this construction in considerable lengths of the great sewer works, under the Metropolitan Board of Works, would be attended with a great saving of expense, compared with the cost of brickwork.

Of the Railway. — Although projects for a railway in connection with the embankment have been laid before you, it does not appear to have a place in the especial objects of your inquiry; nor is it one which I advocate under the present circumstances. Nevertheless I have shown on the plan and section the position which a railway might occupy not only without injury but with benefit to the wharf property, and without affecting prejudicially the appearance of the river frontage. The position shown on the section is immediately in front of the wharves, the level of the rails being 12 feet below Trinity datum, which with 14½ feet for the height of the covered way, and the requisite depth of girders, would leave the wharf front 5 feet above Trinity datum.

At these levels it might be continued from Westminster Bridge to Blackfriars, and passing under Chatham Place, or the abutment of Blackfriars Bridge, it could ascend to the terminus of the London, Chatham, and Dover line.

It is evident that a railway in connection with the wharves would add considerably to their value; but it is also evident that it would intercept all the docks and draw-docks on its line, and that the materials from the barges must be hoisted up in such places as in the cases of those wharfs which have no such draw-docks.

Whatever advantages a railway would possess, it would doubtless be objected to by the occupiers of Whitehall Gardens; but as it could be formed at a comparatively moderate cost, considering the important locality it would traverse in the very heart of London, it might be made the source of a considerable contribution towards the embankment.

In my evidence before the Metropolitan Railway Commissioners in 1846, I proposed a central terminus at the Adelphi, with a railway extending to London Bridge terminus and the Blackwall terminus. The elevation of these projects between Westminster Bridge and Blackfriars Bridge is shown on the two drawings I now lay before you My ideas were that the railway terminus might advantageously occupy a site on the left bank of the Thames, between Westminster and London bridges, being thus placed in connection with the water traffic both in goods and passengers. The Great Western railway might at that period have reached the Adelphi from Bull's Bridge at a very moderate cost; but, unfortunately for them, they elected to enlarge the terminus at Paddington instead of coming into the heart of the metropolis. The stations or termini at Pimlico, at Hungerford, and on the site of the Fleet Prison, are steps in the right direction; but whether it may be worth the cost to connect the first and the last by a junction railway, is a question.

It does not appear to me that a line between Westminster Bridge and Blackfriars, for short traffic only, with the competition of the penny steamers and the trains on the embankment, would yield sufficient return for the outlay.

The arrangement of a plan for a detached embankment, carriage-way, and promenade, for the formation of an intercepting sewer, and for a railway, if required, contemplates access to the side channels within the embankment at an *early period* of the flood tide, by making the sills of the entrances at a level of 17 feet below Trinity datum; once inside the embankment the craft would approach the wharf, with the rise of the tide.

This desideratum of early and easy access could not be obtained if either the sewer or the railway were connected with the embankment, except by *locking;* and my conclusions are, that it is desirable to avoid, as much as possible, innovations upon the present system of traffic, of which *locking* would be one.

The foreshore nearest to the wharves would be formed on a proper level for a bed for the barges suitable to the requirements of the wharfingers. If no railway intervened, their trade would be carried on as it now is, with this exception, that the barges would approach the wharves by the *entrances* instead of by the *open river.*

Single gates would be provided, to retain the water in the side channels, if so determined on, but they are not necessary to the plan.

The Commissioners are, doubtless, well aware that the principal wharfage difficulty in connection with the embankment lies between the Temple Gardens and Blackfriars Bridge, a frontage which is occupied by important wharves and the City Gas works, and where the line of embankment, if restricted to the first pier of the bridge, allows little space for barges inside it. This difficulty may be met by terminating the solid embankment at the east end of the Temple Gardens, and by continuing the roadway and footways to Chatham Place, restricted to 50 feet or less in width, on iron piers and arches, which would leave headway at Trinity high water of from 3′ 0″ feet to 15′ 6″, and at half tide of from 12 feet to 24′ 6″ feet along the line, giving an average at half tide of 18′ 3″ feet.

The convenience of the public and the means of obtaining a profitable frontage would also be considered by a line of street from the east end of the Temple Gardens into Tudor Street, through property of a very inferior description. This line is shown on the plans, and it will be seen that it would open out communications with Fleet Street and Bridge Street, Blackfriars, without the necessity of taking the line which rises to the level of Blackfriars Bridge.

In the foregoing description of the plan proposed by me, I have not entered upon the appropriation of the spaces between the embankment and the present shore, otherwise than as areas for barge accommodation, excepting at Whitehall Gardens and the Temple Gardens. The conversion of these spaces into land, or the enlargement of the embankment beyond the width requisite for the carriage ways and footways, is objectionable on account of its diminishing the ca-

pacity of the river for tidal water, and of its destroying the wharf property; but a suggestion was made to me some years ago by His Royal Highness the Prince Consort (who takes a lively interest in the improvements of the metropolis, and whose knowledge on these subjects is very extensive and practical), by which the tidal capacity of the side channels could be maintained and the area above them be made available for terraces or buildings; and should they appropriated otherwise than by open channels the mode of treatment ought certainly to be on the principle suggested by His Royal Highness.

In the plan laid before the Commissioners I do no more than lay down the simple improvement, by the embankment, leaving it to future consideration when the embankment shall have been made, how the spaces within it shall best be disposed of, according to the changes in the appropriation of the river frontage and the demands for public improvements.

I have not thought it requisite to make an elevation of the terrace embankment because the Commissioners are aware that this can be made suitable to the levels of the roadway, and the character which it may be desirable to give to it. The levels I propose are, for the footway in front of Whitehall Gardens, 5 feet above Trinity datum, rising to 12 feet above the same datum at Hungerford, and continuing at that level until it descends to 5 feet above the datum at the Temple Gardens; from thence it would rise at $2\frac{1}{2}$ per cent. to 19 feet above datum at Blackfriars Bridge.

I maintain the principles which I developed in 1843. I claim the origination of the detached embankment, which I have no doubt is the principle of embankment which, under the Royal Commission, you will recommend, and which can be carried out at the least expense, opening out a direct communication between Westminster and Blackfriars bridges, at a cost not exceeding 450,000*l.*

966. (*Chairman.*) One of the main objects to be gained is the low level sewer. Your low level sewer does not form part of the embankment, but is formed by an excavation and a thick bed of concrete and then a ring of brickwork?—Exactly so.

967. And at a distance from the shore varying, probably?—It could be placed at any distance from the shore. I have interposed there the railway between the wharf and the sewer, but the sewer could be brought so much nearer the wharves if no railway were formed.

968. From the experience which you have had in the river are you of opinion that the ground is sufficiently solid there to justify you in the belief that that sewer would stand if constructed?—Yes; I have no doubt of it. Whether the invert of the sewer is constructed of concrete or of brickwork, the ground would be equally pressed upon; but there may be soft places here and there, and in such places you would fill up with a certain depth of concrete.

969. One suggestion for facilitating the making of that sewer was to put it into an embankment, where it would have the support of the great retaining walls of the embankment, the embankment being a great mass of concrete and earth and the sewer being built into it. That suggestion would seem to carry with it an almost absolute certainty that it would never move after it was once done, and it would also remove all apprehension as to working in quicksands, and under such difficulties as were met with in the construction of the Victoria sewer. You thoroughly understand all these matters, you having had more to do with the river than almost any man living. Can you explain to us, in such a way as would satisfy our minds, how such a construction as that can be made altogether safe, considering all these circumstances?—Whether the sewer is made on the site shown on that section, or whether it is made under the embankment, the ground might be equally firm or equally loose. In either case the embankment would not assist the support of the invert; it would only assist the support of the sides of the sewer. When the sewer is made, of course if the ground were soft it would either be piled or excavated deep and filled up with concrete, depending upon the nature of the ground. The same operation must be performed if the sewer is made in the embankment; and if it is made in the embankment you have to contend with more water; that is, you have not the works of the sewer so soon out of the water as you would if the sewer were made near the wharves. You would have to contend with more water because you are not supported on the sides by the ground, the ground at the embankment being on a much lower level than the ground near the wharves. Taking into consideration the question of the foundation of the sewer, and supposing, which is a certainty, that whether the sewer is near the wharves or in the line of the embankment, the ground on which it rests must either be solid or solidified. The only advantage you have in placing the sewer in the embankment is that you get so much support against lateral pressure, but that support can very easily be obtained by increasing the thickness of the concrete. If the sewer were in the embankment there would be a deeper shaft or a greater depth of ground to be passed through to reach it in case of repairs.

970. It was the internal pressure which I was endeavouring to draw your attention to. The question is whether you do not relieve the sewer from that lateral pressure by the solid retaining wall to enclose the embankment?—No doubt you do; but you can do that equally well in the other case by increasing the thickness of the concrete; or supposing the gravel is hard and good, you then would not need any abutment; if it is not, you must make an abutment with concrete. Then it appears to me (it will so strike all the members of the Commission) the sewer is a very small work compared with the embankment. The sewer in the embankment would interfere with the entrance of all the barges, that is, they must enter at a higher level than they otherwise would, whereas by placing the sewer near the wharves you are free from all objection of that kind. Then the sewer being a very inexpensive work compared with the embankment, would it be worth while to make the embankment merely to support the sewer? I am dealing with each *per se*.

971. To go to another part of the question,—your carriage traffic commences at the west, near Charing Cross?—At the end of Whitehall Place.

972. And it goes along the new line of embankment till it comes down to the lower edge of Temple Gardens?—Yes, it does.

973. And then you go off by a diagonal street to Tudor Street?—Yes, that is a suggestion.

974. With regard to the water, from the west end of Temple Gardens going westward you enclose a long line of water?—From Temple Gardens to Whitehall Gardens.

975. And you have four openings into it?—Five between those limits.

976. With or without gates?—Yes, as it may be determined.

977. Those entrances are a long way apart; have you ascertained that that would satisfy the wharfingers and barge owners?—I believe that if the wharfingers were asked, they would like as many openings as possible; they would prefer no impediment whatever between their wharves and the river; but I have no doubt that if the embankment were made, and it were proposed to take it away again, the objections on the part of the wharfingers to the removal of the embankment would be much greater than they are to the formation of the embankment. I believe the entrances are sufficient for the trade.

978. Coming eastward, you are in front of wharf property again, and there, in order to obviate any difficulties, you carry the line on a series of iron arches, having a span of forty-five feet, resting on piers about five feet thick?—Yes; in that respect I would observe that this proposal differs from the plan laid before the Commission of 1843, inasmuch as

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in that plan a narrow solid embankment was interposed; but the opinion of the wharfingers was so strong that there would not be accommodation for them, that on the present occasion I propose to omit that solid embankment, and leave them free access between the piers and under the arches to their wharves.

979. Are you perfectly satisfied with such a mode of construction for carrying a road, when you are working for countless ages to come?—It is on the same principle as carrying a road over a river by an iron bridge. No doubt if it is sufficient in the one case, it is sufficient in the other.

980. In the case of the bridge, you are driven to that by necessity; could you say whether you think that that construction would continue sound and steady, we will say for 100 years?—Yes; the iron being protected, I have no doubt of it. I should fill those iron piers in with concrete and make them solid.

981. They would not be columns?—No; you might in fact call them a series of bridges.

982. What would be about the cost of that, as compared with a solid embankment?—It would be more.

983. That is the reason why you do not carry that construction along the whole line?—That is one reason; and the other is, that there would be no equalization in the current of the river if the embankment were carried by open arches along the whole line. The solid embankment confines the river between its line and the Surrey side, but if a roadway were carried upon open piers and arches there would be a series of eddies along the whole line, whether with the flood tide or the ebb tide.

984. By your mode of constructing the embankment you do not much diminish the water-holding capacity of the river?—No; and the capacity for the retention of the water inside the embankment would be increased considerably by the deepening of the shore in those side channels to a level say of one foot below low water.

985. Your opinion is, that it is not desirable that the water-holding capacity of the river should be much diminished?—It should not; even the diminution by the embankment itself, narrow as it is, ought to be provided for by some excavation either on the shores of the river themselves or in another part of the river to serve as a reservoir for the tidal water, that is, that the port of London should, after the embankment is completed, have as much water going down as it has at present.

986. That might be provided by the purchase of land within the tidal range, where it could be got at the most moderate cost?—Yes, easily.

987. (*Sir Joshua Jebb.*) It could also be provided by dredging?—It could be provided by dredging above low-water line.

988. I do not quite understand your mode of crossing the new railway bridge at Hungerford; at what level would you cross it?—The embankment would pass under it, that is, the height of the embankment would leave about fourteen feet clear at Waterloo Bridge, and I think somewhat more (though I have not the measurements by me) at Hungerford Bridge; and as the level of the railway bridge at Hungerford will be above the present level, there will be ample room.

989. You go at a low level through Waterloo Bridge?—Yes; fourteen feet below the crown of the arch.

990. Would it be much above the springing of the arch?—It would be about 14 feet above the springing of the arch.

991. Would not that rather interfere with the beauty of the bridge?—No doubt it would; any structure under the bridge would interfere with its beauty.

992. It would not so much interfere if the parapet wall of the embankment were only up to the same height as the springing of the arch?—I will have a rough drawing of it sent in. It might descend at Waterloo Bridge two or three feet, and rise again; but seeing that 12 feet was sufficient to allow of traffic being passed under the bridge, I thought it was not necessary to cause a break in the line.

993. (*Capt. Galton.*) You said that a solid embankment was uncalled for; why is it uncalled for?—I understand that one object of the inquiry is to provide a carriage-way between Westminster Bridge and Blackfriars Bridge. To obtain a carriage-way you do not need a solid embankment—I mean an embankment made solid to the present shore line; therefore I say it is uncalled for; and then I also say that it would be prejudicial to the port of London.

994. Is the trade of the river increasing above Blackfriars Bridge?—It is increasing, I believe, at some wharves, but not at others; it has decreased at the Adelphi,—several wharves there are to be let.

995. Do you know whether the number of wharves between Westminster Bridge and Blackfriars Bridges is the same as it was in 1843?—I believe they have varied very little, if at all.

996. Do you consider the trade at those wharves of sufficient importance to authorize the construction of docks in that part of the river?—Yes, docks or side channels. If you had to purchase those wharves it would involve, perhaps, double the cost of the work; but at the same time I do not call myself an authority in the valuation of those things; I would give more for the opinion of one of the members of the Commission than I would for my own.

997. The most important docks are near Blackfriars Bridge, are they not?—Yes, they are the most important in that part of the line; they require a large area of water, or shore, which cannot well be obtained if the embankment is limited to the first pier of Blackfriars Bridge, which is the point beyond which I would recommend the embankment should not extend.

998. In this plan you take a road from the east end of the Temple to Tudor Street?—Yes, as a branch.

999. By so doing you cut away one or two wharves to begin with?—I cut off one.

1000. Then you carry the railway through the City Gasworks, do you not?—It is only in front of the City Gasworks; it does not cut off any communication, except the communication at Whitefriars Dock.

1001. It goes close, almost through, a part of their gasholder?—The railway goes in front of their wharf, not through their works, and the road just clears them.

1002. If the railway were constructed in front of the wharves it would reduce the area between the frontage and the embankment to 70 feet?—Yes.

1003. And the space between the columns would be 45 feet; therefore there would scarcely be room for the barges to turn?—They would not turn there; they would only go in, unload, and come out again. As I am not advocating a railway, I have not gone fully into the details.

1004. You put the railway merely as an alternative proposition, in case it were required to reimburse part of the outlay?—Yes: I show its practicability on the least objectionable plan.

1005. What is the area of the docks you provide?—27 acres if there be no solid embankment, or 18½ acres if the spaces at Whitehall Gardens and the Temple Gardens are filled.

1006. Do you intend the tide to flow in and out at every tide?—Yes.

1007. The docks may be empty at low water?—They may be empty at low water; I would suggest that, to accommodate the present trade. I ought to say that from that 27 acres there would be the diminution, according to this plan, of the solid embankment between Westminster Bridge and Whitehall Gardens, and in front of Whitehall Gardens and the Temple Gardens.

The acreage is as follows :—

	Acres.	Roods.	Poles.
The area of promenade, 70 feet roadway, &c., is - - -	6	3	11
Ditto of ground reclaimed between Westminster Bridge and Whitehall Gardens - - - -	2	1	8
Ditto of pleasure gardens in front of Whitehall - - -	4	3	38
Ditto of pleasure gardens in front of Temple Gardens - -	1	1	27
Ditto of docks, entrances, &c. -	18	1	2
	33	3	22

1008. Have you estimated the cubic volume of water which would flow in and out ?—I have given that in my third letter to Lord Lincoln, which, with the corresponding documents, appears in the Appendix of the First Report of the Commissioners for Improving the Metropolis,—27th January 1844.

1009. Do you think that there would be any difficulty in barges getting through those entrances when the tide was running ?—There would be an indraught through all those entrances, which would help the barges through ; there would be dolphin piles on each side of the entrance to assist the barges in. As to the difficulties to the bargemen, there would be none worthy of consideration in reference to the plan.

1010. Have you considered the question whether mud is likely to accumulate in docks of this nature ?—It would accumulate if the barges were not lying there at low water. But in all cases on the shore, and especially in Scotland Yard, which is in a complete eddy, the grounding of the barges every tide presses out the mud, which is carried away by the tide.

1011. Is not that a good deal caused by the steamers ?—Yes; whenever the fore-shore is near the line of the steamers, the mud is washed away by the swell ; but even at a considerable distance from the line of the steamers the pressure of the barges prevents its accumulation ; at the same time there would be more tendency for the mud to accumulate when the barges are shut off from the river than there is now in the recesses at Scotland Yard.

1012. Do you consider that the accumulation would be anything like what it is in the docks lower down the river, or less or greater ?—I dare say it would be as great as in the docks if the water were maintained and did not pass in and out every tide.

1013. That would be a source of constant expense, I suppose ?—It could be easily washed out every three or four tides by a small steamer running along it, or by the usual mode of cleaning the foreshore ; no doubt there would be an expense in cleaning.

1014. Do you propose to take in the second arch of Waterloo Bridge ?—I pass under the second arch of Waterloo Bridge, but do not stop the waterway.

1015. Leaving a certain amount of water way between ?—Yes ; I have taken the line which the former Commission took, and which I think is a very good line, and better than that which I proposed, which came to the second pier of Blackfriars Bridge ; but in that case it was to provide for the barges, and as I proposed that the tide should flow up the side channels as well as in the centre of the river, it was not a diminution of the tidal water except to the extent of the solid terrace.

1016. Should you dredge away that bank of mud or shingle which exists at low water on the south side of the river near Waterloo Bridge ?—I should let the dredging be done under the Thames Conservancy ; but any dredging in the locality of Waterloo Bridge must be very carefully done. The piers are founded at a much higher level on the Surrey side than on the Middlesex side, and there was a cut made under one of the arches in 1843, and such a scour took place that they were obliged to close it.

1017. Would not your sewer interfere with any existing draw docks ?—None.

1018. It would be at a sufficiently low level ?—Yes.

1019. Do you consider that it would be an advantage or not to place the sewer in the embankment ?—You would have undoubtedly the abutment of the embankment against the sides of the sewer, and in such a case you would not need so much concrete on the sides, but the advantages generally are in the sewer being detached from the embankment.

1020. On the whole, do you think that it would be an advantage ?—*Pro tanto ;* but of course I should not say that it would be worth while to make the embankment for the sewer.

1021. If the embankment is to be made, do you consider it desirable to place the sewer within it ?—I say the sewer in the embankment would be objectionable as not allowing the barges to go in until the tide has risen to a certain height ; and therefore, looking at it as an engineer, I should say that it would be better to provide by increased thickness of concrete or counterforts against lateral pressure rather than incur the inconvenience to barges by placing the sewer in the embankment.

1022. You propose to construct the walls of the embankment with concrete, with a facing of stone or brickwork ?—Yes ; as I have done in the Chelsea embankment, and with some granite slabs in front, by the introduction of which at Greenock I have saved that corporation about 20,000*l.* out of little more than 60,000*l.*

1023. What is your estimate of the saving which you would effect by that mode of construction ?—I will send that in to the Commissioners.

1024. Your plan takes one street up to Tudor Street, and the other to the level of Blackfriars Bridge ?—Yes, forming two outlets for the traffic.

1025. Do you think that it would be providing a sufficient thoroughfare between Westminster and the city, to stop short at that point ?—It would be more desirable to run on to Queenhithe ; but there is one circumstance, which must always be a disadvantage, namely, crossing Blackfriars Bridge with the traffic at right angles to the bridge ; it would be better, perhaps, to come out again by a curve to the foot of the bridge, crossing somewhat obliquely, and then returning ; but the carriage-way and footway can be continued to Queenhithe by forming it in a gallery, as it were an advanced warehouse front.

1026. That would interfere with all the existing wharves, I presume ?—There would be a new wharf frontage and a new warehouse frontage made to the advanced line ; and at the level of the embankment, if it were carried on the level of Blackfriars Bridge, there would be a gallery in that warehouse along which the line would be continued, and the traffic would be carried on in the floor under the roadway, and in the floors above. For instance (*exhibiting a diagram*), see Plate, supposing that to be the line of the present wharfage, and supposing that to be the advanced line of warehouse wall on the line of the embankment, that gallery would be formed in the warehouse, the materials being hoisted up to the floor above, and hoisted down to the floor below, running in on little trams ; that is the only way in which the carriage way could be continued in front of those wharves below Blackfriars Bridge.

1027. That would be, to some extent, interfered with by the traffic between the river and the warehouses, would it not ; bargemen and others would require to pass between the warehouse and the river ?—I should shut off their communication with that part of the warehouse. The carriage-way in this gallery would not be interfered with by any of the traffic ; they would lose only this (*pointing to the diagrams*) ; for instance, below Blackfriars Bridge there is a large mill, you see them hoist to every floor. Two of the floors, probably, which would be underneath, you could not hoist into, but you would have to hoist up to and let down from the floor above.

1028. The line being carried at 19 feet above the level of Blackfriars Bridge abutment, you would

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have two floors underneath which you could hoist into; but as the 19 feet coming to Queenhithe would be diminished, you would cut them off from the usual hoist?—Exactly so.

1029. All that would involve compensation?—I dare say that could be arranged; we should give them so much more space that there would be the *quid pro quo*.

1030. (*Mr. Thwaites.*) I observe that your road way is intersected by openings into those various docks over which are moving bridges?—I think that it would be necessary to have a moving bridge at Hungerford Bridge on account of the straw barges, but not anywhere else; they are the only barges which would require moveable bridges.

1031. There are six shown upon this plan?—As the headway above high water would be 11 feet it is not proposed that those should be opening bridges; I would call them fixed bridges under which the barges could pass. The sills of the lock being say a foot above low water, 17 feet below Trinity datum, and the level of the roadway being 12 feet above Trinity datum, leaving a foot, we will say, for the girder, you would then have 17 feet and 11 feet, which is 28 feet; and if the barges drew 4 feet water, there would then be 24 feet from their gunwale up to the lower side of the bridge; therefore for the usual traffic it would not be requisite to open those bridges, but for straw barges it might at times, and they might be open at night.

1032. It would be a great interruption to the traffic to have to open the bridges?—I would not open them by day at all.

1033. You would lock up those docks practically by day?—It would only be in the case of the straw barges, and if they went in at an early period of the tide, they could get under the bridge. Supposing them to draw 4 feet, and supposing that there were 5 feet of water on the sill, that would be 23 feet from the surface of the water to the soffit of the bridge for the straw barges to go in, going in at the first of the flood.

1034. I suppose that one reason why you have placed the sewer away from your embankment towards low water is in order to remove the difficulty in passing over the sill into your docks?—That is one reason.

1035. I see from your plan, and I collect from your description, that you will have something like three feet of loading on that sewer?—Yes.

1036. The lower portion is to be formed of concrete, and to be lined with hard Staffordshire brick?—Yes.

1037. The upper portion is to be formed of iron?—No, of brickwork; the iron is only used as a template. Supposing you take a semicircle of iron which could be slung and be secured so that it could not rise by the concrete going in; suppose it were slung so as to allow a certain depth of concrete, the semicircle of iron would be 18 inches in diameter larger than the sewer would be when finished, that is allowing nine inches for the lining. That being put into its place, and the concrete put down into the excavation (you can take it above the centre, if preferred), you get clear of all difficulty with the water, and have a proper ground for the foundation, and you execute the sewer very rapidly and at a very moderate expense.

1038. (*Chairman.*) You would shift it then to another place?—Yes, length after length.

1039. (*Mr. Thwaites.*) From your knowledge of the bed of the river, and of the alterations which from time to time take place in the deposit on the banks, have not you any fear that those three feet of gravel which you propose to load the sewer with, might be removed by the action of the tide, which would thus take away the protection to the sewer from internal pressure?—There would be no scour in that part over the sewer. The sewer so placed of course must be protected in its position there; it lies so that a bed would be formed for the barges over it to lie flat, but if the railway were not formed, and the sewer were carried nearer to the wharves, you could have more ground over it; it is rather a disadvantage, I should say, in the construction of the sewer or in the maintenance of the sewer, that it is not deeper.

1040. Have you considered in reference to a solid embankment, whether there would be any objection on the part of the wharfingers to a solid embankment in front of their wharves by which they might land their goods, supposing that the principle were adopted which you suggest of galleries carrying a tramway from the river wall to the rear of their warehouses under the roadway. Take any particular wharf, you would fill that 100 feet in advance of the wharf, and then give them access by means of an arch—would not the great difficulty of the wharfingers be removed, if they had facilities for removing their goods by those tramways from the river wall to their wharves, a distance of 100 feet?—Then their barges would be lying out in the stream, and would be subject to great deterioration compared with what they are subject to now, lying in a protected part; but unless you make that ground available, I do not see what the object would be in making a solid embankment, because if the ground were not made available for building or other purposes there could be no object in making a solid embankment; besides it would destroy the present wharves without substituting any equivalent for them except those tramways to the present warehouses.

1041. Supposing the wharfingers had this advantage, that their barges should be constantly afloat instead of being stranded on a raised bed as at present, running the risk of being broken; suppose they were constantly floating in front, secured to the river wall by means of rings, taking their goods through an archway underneath the roadway, say 100 feet wide, by means of the tramways which you have suggested, would not that be a great improvement upon the present system?—They would not account it so.

1042. In your judgment, would it be a great improvement?—I think that it would be an improvement on the present system, if you unloaded with hydraulic cranes; but so long as they have a little rise between the level of their barges and the wharves they prefer to carry on their business that way, and I certainly imagine that the wharfingers know best how their business should be carried on.

1043. I suppose that the improvement of their warehouses and compensation also, would be the most satisfactory mode of dealing with the wharfingers?—No doubt.

1044. (*Mr. Hunt.*) Does your estimate include compensation?—I have stated 450,000*l.* including certain compensation; but I should prefer giving it more in detail hereafter.

1045. According to your plan it would not be necessary to construct an embankment at all, for the formation of the low level sewer: you might go on at once?—Yes; there would be no necessity for making an embankment for that sewer.

1046. Supposing you took the roadway to Queenhithe, how would you get rid of the traffic?—It must go into Cannon Street. You could not be expected as Commissioners for the Thames Embankment to carry new streets through the city.

1047. All the traffic from Westminster along this road you would discharge at Queenhithe?—It would be discharged in different places; some of it in Tudor Street, some would go over Blackfriars Bridge, and some in various other ways.

1048. Supposing your solid embankment were constructed with wharves outside, as the embankment is constructed opposite Mr. Cubitt's works, at Millbank, what would be the objection then; the roadway would be between the wharves and any buildings which might be erected upon the ground which would be reclaimed?—Then you would have the wharves outside the roadway. The objection to that is, that the roadway instead of being an enjoyable

promenade (for I always look at it with that view; for cart and waggon traffic and driving in cabs, you do not care much about it)—for a promenade it would be completely destroyed: but if you look at Mr. Rendel's modification of Plan B, you see something of that kind, without making the embankment quite solid through; you see something like 120 feet provided for new wharves, which would have water on either side of them.

1049. Is the only objection to my suggestion that the ornamental character and comfort of the embankment-road as a promenade would be interfered with?—No, there is a still greater objection than that; that is, the obstruction of the tidal water by filling all that part up solid.

1050. What would be the effect upon barges by lying outside such a wharf as that?—Many of them would be carried away with the ice in a strong ebb or flood; the great difficulty would be to keep the barges in their place. When I was acting-engineer at the Thames Tunnel, when there was a great flow of ice in the river, I have seen the barges, where they were not in a recess or in a bight, driven one over another, several in depth, and all destroyed.

1051. Suppose you made a barge bed outside the wharves?—Then you are gradually progressing, towards destroying the river altogether; first, filling up the space between the line and the land solid then still further filling it up by what would be, a necessity to provide for the barges, filling it up by hards for the barges to lie upon.

1052. You might keep the embankment closer than you have shown upon your drawing?—Yes, you might; but looking at the whole question it would be very dangerous to attempt to interfere with the trade at the wharves as it is now carried on. By the plan I have shown, it becomes a progressive change. You get your road in the river, and the traffic is carried on as it is at present; afterwards, when the embankment is made, it would then be seen what would be further desirable to be done. My advice would be, keep the river as wide as possible—keep the water area as large as possible—whatever you do, do not fill up your river.

1053. Are you aware of any inconvenience having arisen to the barges from lying outside those wharves to which I have alluded opposite Mr. Cubitt's?—There are not many barges there; they do not lie out as they do at the coal wharves. Taking a couple of the barges in width, I do not think that there would be any practical inconvenience with good moorings.

1054. (*Mr. Thwaites.*) I think that you stated, in answer to a question put to you by one of the Commissioners, that there would be no difficulty in constructing the sewer without the embankment; how would you construct it—would you have a cofferdam?—No; I should not have a cofferdam; I should make an excavation; if the ground were hard gravel I should not need to pile it.

1055. Do you know the depth of the water where you propose to construct it?—On an average the depth of the sewer is eighteen feet below Trinity datum, falling deeper at Blackfriars Bridge, there would be six feet of water over the sewer at high water.

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1056. Have you calculated the cost of constructing the sewer in the absence of the embankment?—I do not think that the cost would exceed 30,000*l.*, 45,000*l.* with extra concrete.

1057. If it were constructed without the embankment, you would construct it nearer the wharves?—I should be disposed to do that. It would depend very much on the depth of the ground on the shore, inasmuch as if I had sufficient ground over it I would not go far in.

1058. (*Sir Joshua Jebb.*) Do not you think that it would be absolutely necessary, in order to relieve the crowded state of Fleet Street and Ludgate Hill, to continue this road to Southwark Bridge?—It would be better, no doubt, and it could be done as I suggest; but you must come to a point, terminate it where you like, which would throw the traffic, supposing it were through-traffic, into some inconvenient streets in the city.

1059. (*Capt. Galton.*) Would it simplify the question to make a street from Blackfriars Bridge to the city?—It would; it would be a great advantage, even to reach Cannon Street.

1060. (*Mr. Hunt.*) Would not it be a desirable thing to take the street right away to the Bank from Blackfriars Bridge?—No doubt; but I apprehend that that does not come within the province of the Commissioners.

1061. That would improve the thoroughfares?—No doubt it would.

1062. (*Mr. M'Clean.*) In the plan which you sent in on the 8th of April you show a solid embankment throughout?—Yes, with openings for barges.

1063. The other plan has been subsequently prepared?—I sent in the first as the plan approved by the Commissioners in 1844, reserving to myself the liberty to suggest alterations.

1064. In the first plan you show floating docks throughout the whole distance between Blackfriars Bridge and Westminster Bridge?—The gates are shown; but, as you see in my evidence in 1843, I did not propose that the water should be kept up.

1065. What would be the difference, so far as regards the port, between having this water kept up and having the whole of this solid?—There would not be little difference, at certain tides, if you prevent the tidal water coming into the side channel; you might as well have a solid embankment, but if a solid embankment were made, the mischief, by the abstraction of tidal water, would be complete and irreparable; whereas if a system of tidal docks, or of floating docks, were provided for, a certain level of water might be arranged, above which all the tidal water would be available for scour.

1066. You showed no opening in front of Whitehall?—No; but one at the end of Whitehall Gardens.

1067. You had no street communicating with Tudor Street?—No; I look upon that street to Tudor Street as relieving the embankment of all the traffic which does not require to come to Blackfriars Bridge.

The witness withdrew.

Mr. Joseph William Bazalgette examined.

Mr. J. W. Bazalgette.

1068. (*Chairman.*) Will you explain the general character of your plan?—The object I have had in view has been threefold: first, to improve the main thoroughfares into the city; secondly, to improve the navigation and condition of the Thames; and thirdly, to facilitate the construction of the low-level sewer; and in describing those objects I will confine myself to a general outline, leaving you to elicit such details as you may desire. Last year Mr. Hemans and I proposed to the Committee of the House of Commons an embankment commencing at Westminster Bridge, with a roadway 100 feet wide formed along the face of that embankment, passing, as shown upon this plan by the red line, from Westminster Bridge underneath Hungerford Bridge and the new railway, then with a branch rising towards Waterloo Bridge, the main road passing underneath that bridge; then passing on to Blackfriars Bridge, rising to Blackfriars Bridge, and falling again to Queenhithe. From Queenhithe we proposed a road direct to the Bank, 60 feet wide; we proposed docks at various places where wharves at present exist. By means of that roadway persons could have passed from Westminster and from Charing Cross along the new roadway to Blackfriars Bridge, then passing over Blackfriars Bridge they would have come, by the

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new roadway now being constructed, to the London Bridge railway station; or if they were going to the city they would pass along the north bank to Queenhithe and end at the Bank. So that the traffic would have been split at Blackfriars, and that proportion going over London Bridge to the London Bridge Station would not have travelled through the city. Since the preparation of that plan, the London, Chatham, and Dover railway has received the sanction of Parliament, and has obliged me to modify that proposition to some extent. It would be impossible to pass that railway unless the Board of Trade gave notice to the Company before next October to keep up their levels, and an alteration were made to Blackfriars Bridge. This has induced me to reconsider the subject and to make further inquiries with reference to the wharfingers. I found that the great difficulty with the wharfingers existed between Blackfriars and Queenhithe. Very nearly half the wharves between Westminster and Queenhithe are situated between Blackfriars and Queenhithe, and the business at these wharves is of the most important character. I therefore propose an alternative plan, shown on my plan by the green line,* stopping at Blackfriars Bridge, passing along the new street proposed by the city to Cannon Street, and another from Cannon Street to the Bank. I have also, to some extent, considered the proposition and framed some estimates of the expense of forming both an embankment with docks, and an embankment without docks, and I will lay a general outline of the estimates I have framed before the Commissioners. My estimate for the embankment, as shown upon this design, from Westminster Bridge to Queenhithe, is 845,000*l.* From Queenhithe to Cannon Street, which would be a very important improvement, would cost 175,000*l.* That would deliver the traffic into a wide street, Cannon Street; but an expenditure of another 240,000*l.* would carry that road right on to the Bank; so that my estimate for the embankment, with docks to Queenhithe, and a roadway 60 feet wide from Queenhithe on to the Bank, would be 1,260,000*l.*

1069. (*Mr. Hunt.*) That is the net cost of the streets?—I should state that, in my opinion, it would not do to construct an embankment on the north side of the river without also constructing an embankment on the south side, for I purpose to dredge the river generally to the depth of 5 or 6 feet below low water; that would remove a large portion of the bed of the river on the south side, and it would be necessary to face the existing wharves. My estimate for stopping at Blackfriars and going by Cannon Street to the Bank, would be for the embankment 642,000*l.*; from Blackfriars to Cannon Street 550,000*l.*, and from Cannon Street to the Bank 300,000*l.* Those are for structural works, making 1,492,000*l.* I then add for compensation and contingencies (for I apprehend the compensation would be very small indeed if the docks I propose are provided), 64,000*l.* to Blackfriars Bridge; to which I have to add the cost of the embankment on the south side of the Thames, 201,500*l.*; making a total of 1,758,000*l.* I found there were not more than twenty-nine wharves, or places of business, between Westminster Bridge and Blackfriars, whereas there were twenty-six between Blackfriars and Queenhithe, and the wharves above Blackfriars Bridge are not of the value that those below the bridge are; therefore I have formed some estimate of the cost of constructing a solid embankment. Supposing the work I have suggested were filled in solid, (and if that were done I assume it would be necessary to purchase all the business premises between Westminster and Blackfriars,) my estimate from Westminster to Blackfriars Bridge would be 586,700*l.*, that is the structural cost of the solid embankment; so that in point of fact the saving on works in the cost of construction would be above 55,000*l.*

1070. (*Mr. Thwaites.*) Between a solid embankment and open docks?—Yes.

1071. In favour of the solid embankment?—Yes; then comes the cost of the streets, 550,000*l.* and 300,000*l.*, making a total of 1,437,000*l.* for the actual works, taking you to the Bank.

1072. (*Chairman.*) You mean with the purchase of property for making the streets?—Yes; but then there is the item of the purchase of property of the wharves along the river, which I estimate at three quarters of a million.

1073. (*Mr. Thwaites.*) First of all, your estimate for structural works from Westminster to Blackfriars for a solid embankment is 586,700*l.*?—Yes.

1074. Then for the formation of the street from Blackfriars to the Bank is how much?—850,000*l.* the total; and then for the purchase of wharf property 750,000*l.*, that, I should state at once, is a sum arrived at in a very approximate manner. I should be happy to state to the Commission how I have arrived at it, so that they may form their own opinion upon it, if they would wish me to give it. I have not gone into that subject in detail, but I have made inquiries with respect to the nature of the property, and have formed my own opinion as to its value generally; and I have no doubt that that sum of three quarters of a million fairly represents the cost of purchasing that property.

1075. (*Mr. Hunt.*) You have calculated in your mind what the wharves would let for, and how many years' purchase should be put upon that rental, and how much in addition should be allowed for the trade?—Yes; just so.

1076. That amounts to 750,000*l.*?—Yes; to that you still have to add the cost of embanking the south side of the Thames, which gives a total of 2,389,000*l.*; that is the total estimate for a solid embankment. But I have also formed a similar estimate for the same route to Queenhithe, and from thence to the Bank. I have had much more difficulty in making any estimate for the purchase of the property between Blackfriars Bridge and Queenhithe property; and the figures I arrived at were so large, that it satisfied me at once that that would not be done; and perhaps, therefore, it may be hardly necessary for me to state the amount.

1077. I think it might be useful if you were to give it?—I will give the items very shortly. The formation of the embankment would be 767,000*l.* New street 175,000*l.* and 240,000*l.*; purchase of property 2,050,000*l.*; total 3,232,000*l.*; and for the south side 201,500*l.* in addition; that figure is more vague, and I am not prepared to say that even that sum would purchase all of that property.

1078. You have not given us the distinct item for the purchase of property between Blackfriars and Queenhithe?—I have stated that sum; the whole of the property is 2,050,000*l.*

1079. You have said that from inquiries you have made you are satisfied that a certain sum would purchase all the property between Blackfriars and Westminster, You said also that between Blackfriars and Queenhithe you found the thing involved in great difficulty, that the amount came to so much that it would not be expedient to recommend that project; but you can tell us what the amount is, which, from the inquiries you have made, you roughly estimate that we shall have to pay, supposing we buy up the property between Blackfriars and Queenhithe?—It will be the difference between three quarters of a million and two millions; that is, a million and a quarter. There is one objection which would be raised to going to Blackfriars, that it would leave an awkward bay in the river; and at present I do not see how that is to be overcome without great difficulty. I have seen many of the wharfingers there, and talked to them about docks. It is, however, so narrow at Queenhithe that you could not have docks; and I have proposed to sink iron cylinders in places where they now have piles, dividing properties, and to throw arches across, so as to enable barges to come alongside the property,

* This line was not inserted on the plan until the 13th May 1861.

and raise the goods to the warehouses from the barges as they now do. I think, generally, they consider that plan would meet their views as well as any ; but they still object.

1080. (*Mr. Hunt.*) Will you tell us whether you have made allowance for the reclaimed land ?—No ; I have not made any estimate of the value of that land.

1081. It will be a credit ?—Of course, by adopting that plan you would have a very valuable frontage on either side of that line of street.

1082. That you have counted for ?—No, I have not. I have not proposed to buy sufficient land to give you frontage, but just the 60 feet. I have not taken any credit for a return upon that, nor for the value of the land reclaimed within the embankment. There will be a large amount of land reclaimed ; in all, there will be 36 acres reclaimed from the river exclusive of the roadway, or 32½ to Blackfriars, of which 17½ will be water, and 15 will be embankment. I may state that I anticipate very great difficulty and danger in constructing the sewer along the foreshore of the river without the embankment. The late Mr. Stephenson, when a Commissioner of Sewers, proposed to carry the Victoria Street sewer along the foreshore of the river, and it was commenced with the intention passing by that route, but the difficulties encountered in the construction of that sewer were so great as to induce Mr. Stephenson to say that it would be impossible, without great danger to property, to continue that sewer along the foreshore of the river. He devoted a great deal of time and attention to it himself, and was continually on the works during the progress of the Victoria sewer. The embankment I propose would form a cofferdam, and would prevent the ingress of the tide, and keep that ground sufficiently dry to enable us to get the sewer in. The way I would propose to construct it would be to fill in to a large extent the ground, and then excavate again, and place the sewer in the centre. That plan exhibits the outlines of the plan I propose.

1083. (*Chairman.*) With regard to the construction of your sewer, if you were to drive iron piling all the way along just far enough off in front of the wharves to give room for your sewer between such piling and the existing wharves, could not you then construct your sewer without causing any danger to the adjoining property ?—Supposing that piling to go low enough into the solid ground to prevent the tide going under it, and to be high enough to prevent the tide rising over it, it would form a good cofferdam, and would enable us to construct the sewer.

1084. As to going over it, could not you arrange for the constructing of the sewer during part of the tide, letting the water come in and letting it out ?—That would be attended with very great difficulty if the subsoil is of the same nature as that with which we had to deal at the Victoria Street sewer, that is, running quicksand ; for the water getting into that every tide, would fill up a trench as fast as it was opened during low water, and would undermine the adjoining bridges and other buildings.

1085. You are still of opinion, having formed that opinion 12 or 18 months ago, and having had occasion to reconsider it, that the most economical way of making the low level sewer would be within the retaining walls of an embankment ?—Unquestionably.

1086. With regard to your docks, during what time do you propose that the access to the docks should be given ?—Two hours before and two hours after high water, giving at that period a depth of six feet of water upon the sills for vessels to enter.

1087. You would have no gates ?—Yes, I should have gates in the entrances to shut in that six feet of water into the docks, so as to keep the barges always afloat in the docks.

1088. Would it not be less likely to create difficulties if you were so to construct your road as to give wide open a water way, letting your barges lie at the level that they now lie at,—that is, letting the barges lie in that amount of water covering the sill that the covering of the sewer would permit ?—I propose that the bottom of the docks should not be deeper than the top of the sill ; therefore the docks would have six feet of water in them when the gates were closed.

1089. You would give them that which they do not now enjoy, but that would be at the expense of keeping up a series of dock-gates ?—It would. They would have the disadvantage of being able to enter only for eight hours out of the twenty-four, whilst they would have the advantage of having their craft always afloat, and able to move them about to the wharves, emptying some and bringing others up, which they now have not. Then in connection with that, I proposed an arrangement of this kind, that the space underneath the roadway should be devoted to business purposes,—that there should be a large additional storage all round the docks.

1090. You propose that there should be a roadway raised upon columns on your embankment ?—Yes. I propose to construct the embankment solid up to four feet above Trinity high-water, and from that to construct a roadway upon iron arches at levels varying, so as to meet the requirements of the different bridges and approaches as which we pass.

1091. Then the top of the embankment would be used for what purpose ?—The top of the embankment would be used as additional wharfage. It would very much improve the existing wharfage ; instead of there being one side at Temple Dock for instance, there would be four sides for barges to load and unload at ; it would quadruple the facility for carrying on business. Underneath the roadway there would be covered wharves making a large storage for goods, covered and dry ; and by having an upper staging on the level of the road, so that carts might at once load and unload from cranes, you would avoid all the difficulty that now exists of carting traffic from the river up the steep streets into the Strand, and you would get at once upon a good level roadway.

1092. What is upon the top of your arches ?—A roadway.

1093. At a moderate distance above high water you have a solid embankment which would be used for wharves, and above that you would have a superstructure supported upon columns and pillars of iron, and with iron ribs ?—Yes.

1094. That goes all the way from one end to the other ?—Yes ; nearly so.

1095. (*Sir Joshua Jebb.*) At what level would your roadway intersect Waterloo Bridge ?—It would pass under Waterloo Bridge, with a branch rising up to the bridge, and another coming down again with an incline of 1 in 50.

1096. At what level would it pass under it ?—It would give a headway of 16 feet under the existing arch.

1097. How much above Trinity level would that be ?—It would be eleven feet.

1098. That would be above the springing of the arch, then ?—I am not certain.

1099. (*Capt. Galton.*) Which do you prefer, the solid embankment or the docks ?—I think that the solid embankment is preferable, if you get rid of the existing trade. I think that land is so valuable all along there that it would be preferable.

1100. You adopt the docks solely as a means of compensating the wharfingers ?—Yes. At the time I proposed the docks I looked upon the wharfingers' property as more valuable than I now believe it to be.

1101. You bring your embankment some distance into the river ; for instance, you take in the second arch of Waterloo Bridge, and 2½ of Blackfriars ?—Two of Blackfriars ; one, if you stop at Cannon street.

1102. The docks you provide are entered by locks, and there would be no additional tidal water ?—They would be entered by tidal gates.

1103. Have you considered at all the question whether mud would accumulate within ?—Yes.

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1104. That would be a source of expense, would it not?—The expense will be more than compensated in the saving in dredging the river, because I believe when the river is so altered it will maintain its own bed.

1105. If it were a solid embankment, there would not be that source of expense?—There would not.

1106. Are they tidal gates or locks that you enter by?—Tidal gates.

1107. Where does your sewer commence, and where is it to go to?—It commences at the outlet of the Victoria Street sewer, passing along the centre of the embankment to Blackfriars Bridge, and then along the new street to Cannon Street.

1108. Are the lines shown on your plan Mr. Walker's lines?—I think generally my line projects further into the river than Mr. Walker's.

1109. Assuming you have docks, how do you provide for the storm overflows?—By carrying them underneath the bed of the docks and discharging through the embankment under the bottom of the docks.

1110. What size is your intercepting sewer?—Five feet 9 inches at the upper end, and 6 feet 3 inches at the lower end.

1111. What proportion of water that would be brought down by the Fleet sewer would that remove?—A quarter of an inch running off in twenty-four hours.

1112. That is removed at the pumping station?—Yes.

1113. What is the inclination of the sewer?—Two feet in a mile.

1114. It would be a more convenient route for your sewer to leave the river at Blackfriars, as far as the course of the sewer is concerned; but you would have to reverse all your sewers which run into the river between Blackfriars and Queenhithe, would you not?—We do not propose to reverse them all in that case, but to carry the small lines along the front of the river, and turn them back again, just to pick up the district drainage between those points.

1115. Which would be the cheapest for you?—I think for the sewage to come into the low-level sewer at Queenhithe; but it is an item of no very large expenditure; it would not materially affect the estimates I have given.

1116. If you came to Queenhithe, provided no additional street was made, as shown upon your plan, what would then be your course for the sewer?—The course would be then through the existing circuitous and narrow streets leading into Queen Street; but the difficulty of constructing that would be enormous. To stop up any portion of Lower Thames Street at the present time would be something frightful.

1117. Is not it of enormous importance to you to get your sewer below Queenhithe?—It is veryimportant to get it into Cannon Street, and it has occurred to me that one great object of the Thames embankment, and perhaps the most prominent one, will be lost, unless, in connection with that embankment, a new street is formed into the city.

1118. Do you propose to carry the sewer past the Bank?—No, I propose to carry it into Cannon Street, then to Eastcheap and Great Tower Street, still keeping along the foreshore close to the river.

1119. You pass by the Tower?—Yes.

1120. Would not there be an enormous stoppage to traffic in Tower Street and in Eastcheap?—There are places in the neighbourhood of the Tower where we could form shafts without obstructing the traffic; in fact our great difficulty is surmounted when we get there.

1121. When you have passed King William Street?—Yes; the great difficulty is between St. Paul's and Whitehall.

1122. You would be in the London clay?—Entirely.

1123. The bed of your docks would be above the level of your sewer, and therefore you would anticipate no difficulties in making your storm overflows?—None. They might, in case there were any difficulty, act as syphons; there would be a large head there; there would be no difficulty in the operation.

1124. You mentioned that you would go along Great Tower Street; would there be depth enough to the Tower in Great Tower Street?—Yes.

1125. What would be about the level above Ordnance?—Great Tower Street is considerably above high water, and we are from fifty to sixty feet deep at Tower Street.

1126. You would reverse the drainage in the same way as you have been speaking of between Blackfriars and Queenhithe?—Yes; as we should if we had taken the Strand route.

1127. By means of the embankment you shorten the line?—Yes.

1128. To that extent you lessen the cost?—Yes; I have made an estimate of that; and I think the cost of constructing this sewer between Cannon Street and the Victoria Street sewer by the Strand will be 50,000*l.*, and the cost of constructing it in the embankment about 20,000*l.*, showing a saving of about 30,000*l.*

1129. That is, taking the embankment as a work in progress?—Yes.

1130. Would not it be essential to the construction of your sewer after you arrive at Cannon Street, that the street should be continued to the Poultry?—No, it is not.

1131. Supposing you construct your sewer along Cannon Street, you would stop up that street entirely?—Not entirely.

1132. You could not tunnel in Cannon Street, could you?—Yes; but there would be an obstruction wherever our shafts were. We should never thoroughly stop the traffic in Cannon Street.

1133. (*Mr. Thwaites.*) In constructing either a solid embankment or an embankment with inner docks, is it, in your judgment, absolutely necessary to construct a river wall on the south side of the river?—It is.

1134. Do you think in pushing the embankment into the second pier of Waterloo Bridge it would throw the tide on the opposite side so as to endanger the constructions on that side?—It would throw the tide nearer to the south side, and in the course of time wash away the banks on the south side. It is part of my proposition to deepen the bed of the river four or five feet below low water, and that would endanger those wharves.

1135. Have you any other object in that than compensating for the water displaced by the solid embankment?—Yes; my object is the improvement of the navigation. A river filled with shoals is not a perfect river for navigation; it becomes more essential to improve the navigable channel, inasmuch as you diminish it on the north side by the embankment.

1136. Is it your opinion that after the dredging you have referred to, you would create a uniform scour which would affect the foundation of the bridges?—I think not, excepting Blackfriars, which is now in a very bad state, and would require re-construction entirely.

1137. Is it your opinion that with a roadway terminating at Blackfriars Bridge, rounding off that corner, the action of the tide would be sufficient to wash out that bay which you refer to?—I think that there would be a greater tendency to deposit there than there is at the present time; but that is simply a question of labour to keep the wharves clear.

1138. Do you think that the dock which you propose there would be sufficient to satisfy the wharfingers at that part?—I am afraid not; it would perhaps satisfy some of them.

1139. (*Mr. Hunt.*) Do you think that it ought to satisfy them?—I think that it would be a great advantage to some of them.

1140. (*Mr. Thwaites.*) In your opinion, a roadway from Westminster to Blackfriars Bridge would be incomplete without a continuation to the Bank?—

Quite; and you would lose one main object of the embankment.

1141. Then the only advantage which you would have in constructing your sewer along the foreshore of the river underneath the embankment would be the saving of 30,000*l.* and the great public inconvenience which would result from constructing the sewers along Fleet Street?—The main object is to avoid carrying the sewer along the Strand.

1142. The money saving would be limited to 30,000*l.*?—Yes; there would not be any engineering difficulty in carrying it along the Strand. When I put 30,000*l.*, it is taking a very liberal view of the saving. I apprehend that there would be no compensation by going along the Strand.

1143. You stated that since you first considered the question you have further examined the nature of the wharves along the north side of the river, and you found them not to be of that valuable character which you first anticipated; I suppose that that observation was limited to the part between Westminster Bridge and Blackfriars Bridge?—Yes.

1144. The docks from Blackfriars Bridge to London Bridge are, in your opinion, very valuable?—They are much more numerous and more valuable than those higher up the river.

1145. The importance of those has not diminished in your estimation by subsequent inquiry?—No; they are very formidable.

1146. (*Mr. Hunt.*) Do I understand you to say that the sewer could be constructed from Whitehall to Cannon Street along the Strand and Fleet Street, and down Carter Lane, including all compensation to the owners of adjoining houses, for 50,000*l.*?—We do not compensate the owners of adjoining houses.

1147. Supposing you did structural damage to the houses on each side or to any public building, have you included in your 50,000*l.* any sum in respect of that?—I have. I think I may speak very positively as to those figures. We have works to the amount of about 2,000,000*l.* in hand, let at from 1 to 2 per cent. below my estimates.

1148. If you had a solid embankment, what would be the height of the roadway above Trinity high-water mark, in that case doing away with docks?—I should construct it four feet above Trinity high-water mark. I am speaking generally.

1149. In the other case you would have to materially alter the level of the roadway where it passes under the bridges, so that the line would not be level throughout?—This line would vary.

1150. What would be the inclination of the roadway in various parts?—The steepest inclination is 1 in 50.

1151. It would not be a straight line at any part of it?—This line represents it from Westminster Bridge to Privy Gardens (*pointing to the section and onwards*).

1152. That would not be a very picturesque feature, would it?—Yes, I think it would look very well.

1153. I take it for granted that if you had a solid embankment, doing away with docks altogether, you would have nothing above the level of the roadway; you would have the embankment four feet above Trinity high-water mark, and nothing above that?—You would require connections.

1154. There would be a level roadway with nothing over it, four feet above Trinity high-water mark, except where it connects with the upper level of Waterloo Bridge and other places?—Yes; the roadway I propose for the docks is also level, except where the approaches require it to be on an inclination.

1155. That is also four feet above Trinity high-water mark?—The upper roadway would be level except where the inclination is raised or depressed to go under the bridges or to connect with them.

1156. Where do you begin the embankment on the south side, and where do you terminate it?—I propose to begin the embankment at Westminster Bridge on the south side, and my estimate is for the embankment to London Bridge.

1157. What do you do with the reclaimed land there?—I would let the wharfingers have the benefit of that, either by giving it to them or making terms for the occupation of it.

1158. It would be a considerable gain to them, would not it?—A very great advantage.

1159. Would it be sufficient to compensate them if they built the wall themselves?—Yes, I think that it would in some cases; in other cases they would not gain much advantage.

1160. (*Capt. Burstal.*) I suppose that in drawing that line between Waterloo Bridge and Hungerford Bridge you considered that a dock was necessary for the traffic at the present wharves?—Yes.

1161. The entrances as you have drawn them are at right angles with the stream?—Yes.

1162. Do you think that those entrances, with a strong tide running past them, would be available at the time you speak of, namely, two hours before and two hours after high water?—Yes, with proper appliances.

1163. Do you think that the existing trade renders it necessary to have a dock of that width?—I do not think that it does.

1164. Then what prevailed in your mind in drawing that line with the dock inside it?—My proposition was to accommodate the trade, but I believe that the present trade is not so great as to require the whole of the space occupied by those docks.

1165. Supposing it was necessary to make a dock, you think that a dock probably half the width would satisfy the requirements of the trade there?—If those docks were constructed, the tendency would be to increase the trade.

1166. If there were merely the average number of vessels going to that dock which frequent it now, you would not object to reducing the width of the dock and bringing your roadway further to the north?—I should object to placing the embankment further back; if I reduced the dock, I should add to the solid embankment.

1167. Do you think that the wharfingers would gain any convenience over what they have now by only being able to get to the wharves two hours before and two hours after high water?—I think that they would have great advantages over the present system in carrying on their trade. I think that they would have a disadvantage by only getting into the dock two hours before and two hours after high water, but that is very much more than compensated by the additional accommodation they gain.

1168. The depth of the top of your sewer being from 12 to 13 feet below Trinity high-water mark, you would allow a foot over that for gravel to protect it?—That is the top of the sill, 13 feet 6 inches below Trinity high-water mark.

1169. You said that there was some running quicksand?—Yes.

1170. Have you any reason to believe that there is any to the east of the Victoria sewer?—Yes, it continues some distance.

1171. Between Waterloo Bridge and the Temple, do you think there is any?—I have inquired into that point, but I do not at this moment remember.

1172. You propose, in order to compensate for the encroachments you make upon the navigation there, to dredge all the existing shoals?—Yes.

1173. You think that the sectional area of the river should be preserved?—Yes.

1174. Would it be an advantage to you to go from Blackfriars to Queenhithe, supposing there were no embankment at all, but that you merely went under the foreshore of the river with your sewer?—No; I should prefer going by the land with a new roadway.

1175. You think that there would be great difficulty in constructing the sewer under the foreshore without a wall outside?—Yes.

1176. By coming to the second arch of Blackfriars Bridge you said there would be an ugly projection, and you thought that it would be a recess for mud. Supposing it did terminate abruptly there, do you not

Mr. J. W. Bazalgette.

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consider that the wash of steamers would keep that shore pretty clean?—I think not, and therefore I propose that if the embankment should stop at Blackfriars Bridge, to go as shown by that line to the first arch, so as to get the tide to set in that bay.

1177. (*Chairman.*) If you made your solid embankment or filling up, making no docks behind, should you still deem it necessary to have your raised superstructure?—It would not be necessary.

The witness withdrew.

Mr. GEORGE BURGE examined.

Mr. G. Burge.

1178. (*Chairman.*) You are not a professional engineer?—No, merely a contractor.

1179. You were a contractor for the St. Katherine's Docks?—Yes.

1180. And you have had a great deal to do with barge work on the river?—Yes.

1181. Will you describe your plan?—For the purpose of forming a communication with the city, I propose to build a viaduct upon piers of masonry or iron columns, 60 feet wide upon the surface, and with openings of 150 to 200 feet opposite the various wharves, or any other property where necessary, and of sufficient strength to sustain any known weight of railway engines or road carriages. This plan giving sufficient height will allow barges or other vessels to pass under the viaduct at any state of the tide to the present wharves, and not interfere with property belonging to wharf holders or others on the north side of the river, by which you will save compensation to all parties having interest therein. Roads can be made from the viaduct to communicate with the streets on the north side, namely, the Adelphi, Essex Street, &c., to allow carriages, passengers, &c. to walk or drive to all parts of town. The masonry piers, on the river side south, to carry the viaduct, will be 150 feet wide from east to west, with an arch or subway, 20 feet high by 30 feet wide, through the same to communicate with the streets. The foundations 10 feet below low-water mark; this will allow the foreshore to be dredged out, leaving 6 feet water at low water. Stages or dummy barges can be placed at the end of arch to low water, if necessary. Steam boats and other vessels can embark and disembark, and the passengers pass through the arch under the viaduct to the streets. The inner line of piers or columns will be at any point 150 feet from the face of the present wharves, the level from Westminster Bridge to Blackfriars not more than 10 feet inclination, connecting Waterloo and Blackfriars bridges at the level of the roads without much alteration. This plan can be carried on to London Bridge if required. This scheme being in connection with the Metropolitan low-level sewerage, I propose to construct the sewer 20 feet in front of the present wharves, to intercept the main drains, the outside walls of the sewer to form the face of the wharf walls with proper fenders to protect and allow the barges to unload alongside the same. The reclaimed and increased space I should allow the present wharfholders to purchase at a moderate rate, to compensate for any interruption during the operation; the sewer to commence at any point west or east of Westminster Bridge, with an inclination to the level of the Fleet sewer, Blackfriars Bridge, and then proceeding, unless the embankment is continued, down Earl Street, Upper and Lower Thames Street, passing through Tower Hill ditch, north side, and East Smithfield, to a given point at Shadwell or Limehouse. This sewer will require shafts, &c., to extract the foul air at certain distances, and likewise machinery for discharging or sluicing. If necessary, the lower parts of the shafts can be made available for dwellings and other conveniences, and the upper part for furnaces to consume the foul air. The only parties who could claim any compensation under the scheme are the few having drawing docks. As to the size of the piers, I propose that the piers should be 20 feet wide and 40 feet from south to north, with a width of 10 feet on each side projecting over the carriage way, making 60 feet.

1182. Your road would be supported on the columns and girders?—On masonry.

1183. Having a cantaliver on each side projecting out 10 feet on each side?—Yes, carrying the path each side; that would leave 40 feet for the carriage way.

1184. The carriage way would have the solid embankment under it, and the foot-paths would be supported by cantalivers?—The carriage way would be on the platform. I propose openings of 100 feet opposite to the principal wharves; the cantalivers would carry the paths. I propose to take only one arch at Waterloo Bridge. At Blackfriars Bridge there is sufficient round to connect the platform and get a road into Chatham Place.

1185. (*Captain Burstal.*) What is the headway of your roadway above Trinity high-water mark?—15 feet, and the paving of the platform would be another 3 feet, that would make 18 feet.

1186. Do you dip a little to go under Waterloo Bridge?—No; I come on to the surface of Waterloo Bridge and all the bridges.

1187. What is the width of your columns east and west for barges to go under?—100 feet; it would be more if I could get it; the wider the better. There is only one particular place, namely, Scotland Yard, which will require as much width as possible; I should say 100 feet.

1188. Your sewer is not to be under the roadway?—The sewer I propose to be under the foreshore, about 20 feet from the wharves. I would make the wharf wall one side of the sewer.

1189. What do you do with the shore of the river over the top of the sewer?—Nothing. I could pass at present under Scotland Yard sewer without any alteration of the shore or interruption to the barges.

1190. You would leave all the shore off Scotland Yard, the Adelphi and the Temple as it is now?—Yes, unless you take the 20 feet in the height, allowing for an inclination to the Fleet sewer.

1191. You do not state where you would communicate with the streets?—I would communicate with three or four of them; that can be done anywhere; I am on a level for the streets. My estimate would be dependent upon the width of the viaduct and its length and materials, and the dimensions of the sewer. I think in the rough it would be about 300,000*l.*, that is without compensation. I do not believe that there would be any compensation, because it would not interrupt any work at all. It will be necessary to provide sluicing machinery in the sewer to communicate with the Thames. The high and middle sewers will take away a considerable quantity of water from the low level, and in dry weather require sluicing to assist the drainage.

The witness withdrew.

Mr. JOSEPH BONOMI examined.

Mr. J. Bonomi.

1192. (*Chairman.*) Have you any statement to make to the Commissioners on behalf of Miss Martin?—Having hitherto been unable to attend the meetings of your Commission, I am only acquainted with the plans that have been submitted through the medium of newspaper reports. This, however, may not be material, as my immediate motive in appearing before you on the part of Miss Martin is to urge the priority of her late father in the broad questions which your Commission is appointed to inquire into; namely, the embankment of the river Thames, the formation of a new road of communication, and the

interception of the sewage—objects which he originated, and which formed the bases of all his subsequent plans. The prominent and active position which Mr. Martin occupied in the objects under examination is sufficiently shown by his numerous publications for metropolis and sanitary improvements printed at his own expense, and in parliamentary and other reports, during the last twenty-five years of his life. So early as the year 1827 he published a plan for supplying London with water from the river Colne, which plan appeared in the report of the House of Commons on metropolis water supply, 1828. The object becoming daily of greater importance, he made further inquiries and surveys, which resulted in the publication in 1828 of a "Plan "for supplying with pure water the cities of London "and Westminster," with explanatory maps and illustrations, with the "details of a proposition for se- "curing the Thames from the admission of the "sewage, and rendering it available as manure." It is most essential to observe that this was the very first time any proposal for preserving the river from pollution by diverting the town sewage and applying it to agricultural purposes was advanced or laid down as a principle. In order to meet any possible opposition to the Colne plan, he published, in 1829, a second illustrated plan for effecting the same objects, by a "weir across the Thames at Chelsea," and for "more effectually draining certain marshy lands con- "tiguous to the Thames." In 1832 and 1833 he published farther illustrated plans for preventing the sewage being conveyed into the Thames, and for utilizing the manure. This plan subsequently appeared in the parliamentary Report on the sewers of the metropolis, 1834; and in the same year in the Report on Metropolis water supply, together with a plan for supplying water from the Thames at Teddington, the chemists' analyses and engineer's surveys and estimates in full being furnished. In 1836 an endeavour was made by a committee of influential gentlemen to carry out the Thames improvement plan in its entire state, and both the Government and the city authorities gave a favourable hearing; but the proceedings adopted by some of the parties with whom they were associated, led to the failure of the effort. In that year Mr. Martin published engravings showing the sewer-quay and colonnaded wharves, and likewise the same design with the addition of a railway. In 1838, the entire plan, with the additional details furnished by the assistance of the Admiralty and the Commissioners of Sewers, appeared in the House of Commons Report on metropolis improvements. In 1842 he published the plan in detail, with various additions and large maps and plans, and the plan was submitted to the Metropolis Improvement Commissioners in 1843, and such portions as suited the immediate purpose of the inquiry appeared in its Report. In 1845-6-7-8-9 and '50, he published reiterations of his plans, with various improvements in the details, and he continued to the very last to urge and promote the objects he had at heart. This affords evidence that Mr. Martin spared no expense in order to obtain data and surveys, and to excite public interest in his object. Although his desire to meet the objections of parties more or less interested, led to many variations in the details of his plans, it will be found that he never depasted from his original objects, and that the chief features remained intact. The circumstance of his numerous modifications and improvements of his design, renders it difficult to propound any plan that will not encroach upon some one of his designs; thus the plan explained by Mr. Baxter would appear to be very similar to those published in 1832 and 1836. Mr. Martin, however, proposed that the public walk should form the roof of the railway and wharves instead of running parallel with them. In the plan of 1846, the wall of the railway would form the face-wall next the river. Mr. Sich's plan seems to be identical with the plan published in 1828. Captain Brown's, like that of 1846. Mr. Sheild's and Mr. Aickin's, like those of 1832 and 1836. Without quoting further examples, they almost all adopt the line laid down by Mr. Martin. In conclusion, I would take leave to express a hope, that the earnest labour of an individual, entirely at his own expense, in promulgating and promoting a great public object now about to be realised, may be acknowledged in your report.

Mr. J. Bonomi.
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1193. Miss Martin's object is to establish for her father's memory, that he was the originator of that which has now become generally recognized as the basis for all the plans, namely, the forming of a sewer somewhere in the Thames, and an embankment?—Yes; an intercepting sewer, an embankment, and the utilization of the sewage.

1194. Beyond that she has no object?—No, so far as regards the present inquiry.

The witness withdrew.

Adjourned till to-morrow at 12 o'clock.

Tuesday, 14th May 1861.

PRESENT:

Major-Gen. Sir JOSHUA JEBB, K.C.B.	Captain BURSTAL, R.N.
JOHN THWAITES, Esq.	HENRY ARTHUR HUNT, Esq.
Captain D. GALTON, R.E.	JOHN ROBINSON M'CLEAN, Esq.

Major-General Sir JOSHUA JEBB, K.C.B., in the Chair.

Mr. WILLIAM CARPMAEL examined.

Mr. W. Carpmael.
14 May 1861.

1195. (*Chairman.*) Have you any suggestion to offer to the Commissioners?—All I have done in the matter is this: The chairman of the Metropolitan Board of Works having been appointed one of your body, and I, having the pleasure of being with him very often, sent him copies of various notes I had made containing my views on the subject. I was well acquainted with Mr. Martin, who first brought the subject to my notice many years ago, and ever since I have taken considerable interest in the question of the embankment of the Thames, and being a member of the Board of Works I feel it is my bounden duty to suggest anything which may be to the benefit of the metropolis; and with that view I wrote to the chairman of the Board of Works, giving my notions in general outline of what the Thames ought to have done to it in reference to the embankment.

The same was read as follows:

"In considering the question of constructing a Thames embankment on the north and south sides of the river, the subject should be looked at, first, as to what will be the best arrangement or formation for improving the navigation and usefulness of the river between London and Westminster bridges, and at the same time not injuriously affect the navigation and usefulness below London Bridge.

"After a very careful consideration of the various plans of proposed embankments, I am satisfied that the lines laid down in Mr. Walker's plans are those which may be most advantageously followed, not only when looking at the question in regard to the navigation of the river, but also by reason of those lines necessitating solid embankments in place of docks or floating basins.

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"By following Mr. Walker's lines of embankments, and dredging out the shores and sandbanks so that there shall be none left above low-water mark between London Bridge and Battersea, there will, notwithstanding the contracting the width of the river, be very little, if any, abstraction of space for receiving the tidal waters, and the quantity of water passing through London Bridge each tide will probably not be altered from what it now is, and the navigation and scour below bridge will consequently not be interfered with by making such embankments above London Bridge, whilst the scour will be greatly improved between London and Westminster bridges.

"By following Mr. Walker's lines, and supposing the river walls to be continuous or without recesses of any kind therein, the stream and scour would be rendered very uniform above London Bridge, and the speed of the stream would probably not be materially altered. But if the river be contracted to a much greater extent than what was proposed by Mr. Walker, the speed of the stream would be considerably increased, and the navigation by barges materially interfered with.

"With the exception of Mr. Walker's, I think all the plans which have been suggested propose to extend the embankment into the river on the north side so as to stop the first and second arches of Waterloo and Blackfriars bridges, whilst Mr. Walker only proposed to stop the first or shore arch in each case. Such enlarged or extended construction of embankments would abstract a very large proportion of the whole width of the river, and in like proportion prevent the coming up of water through London Bridge, which would, I have no doubt, materially and injuriously interfere with the navigation and scour of the river below London Bridge. My views in regard to the construction of embankments on the north and south sides of the river between London and Westminster bridges are as follows:

"The embankment on each side should be solid, following Mr. Walker's lines, and the river face of each embankment made continuous, any indents or recesses tending, in proportion to their dimensions, to alter the set of the stream, and thus to produce eddies, and, consequently, sandbanks in the river.

"The river faces of the embankment walls should be upright, or nearly so, and be raised three feet six inches to four feet above Trinity high-water mark, and the shores should be dredged to a depth suitable to allow of barges floating alongside at low tide.

"By taking into the embankment the first or shore arch of Blackfriars Bridge on the north side of the river, including the pier between it and the next or second arch, (which is the minimum width proposed to be abstracted by Mr. Walker,) a space of upwards of 100 feet will be obtained, and much greater widths are abstracted from the shore by Mr. Walker's plans between Blackfriars and Westminster bridges.

"On a solid embankment, such as is above suggested, a raised terrace road 100 feet wide should be constructed, leaving a space between it and the river of about eight to ten feet wide for landing quays. This terrace roadway should be supported by iron columns, presenting a headway at the least of 10 or 11 feet under the roadway where the road passes under the present bridges. This may be readily done between Blackfriars and Westminster bridges, the road passing under the first or shore arch of Waterloo and Hungerford bridges. This roadway may be nearly on a level from end to end, excepting where it is somewhat depressed to pass under the bridges, where the roadway would require a gentle slope on each side of each bridge, in order to get ample headway between the roadway and the arches of the bridges. Where the terrace roadway comes to Blackfriars Bridge, a very gentle slope would bring it to the level of the roadway of the bridge over the first arch; but it would, I think, be unwise to cross Blackfriars Bridge on a level, as it would be very inconvenient for the traffic on the bridge and that on the raised or terrace road crossing each other at right angles. It would be far better to take down the first arch and reconstruct it. The terrace roadway should be continued below Blackfriars Bridge and be connected with Cannon Street, as is proposed by Mr. Bazalgette's plan. By thus constructing a raised terrace road on iron columns there would be a covered way 100 feet in width, with a minimum headway of 10 or 11 feet, and a landing quay all along the Thames, presenting the greatest possible convenience for unloading and landing coals, and also various classes of goods from barges and other craft afloat alongside of the embankment. Under the covered way repairs of casks and repacking of goods may be carried on.

"In regard to coals and goods of various kinds, which are, as now, loaded directly into waggons and carts from barges and other craft, great convenience will be offered for using mechanical lifts, by which a quantity of trade could be carried on along the quays far beyond what has ever been done up to the present time; and, so far from an embankment injuring the wharfingers on the river side, they will, I sincerely believe, be greatly advantaged in carrying on their various businesses.

"By appropriating 30 feet of the covered way or beyond it to the construction of a lower road, on a level with or somewhat below the level of the quays, provision would be made for carrying coals and heavy goods in a direction from east to west, and not only those landed along the quays, but others also; and by the lower road being connected to the streets leading to the Strand and other places, the waggons and carts might turn off northward at the spot most direct to the point it is desired to go to, and which would greatly relieve the present thoroughfares of heavy traffic. The upper or terrace road may also be connected conveniently with Whitehall Place, and with some of the streets leading to the Strand; and this may be done, in most instances, on nearly a level.

"The above simple description of an embankment and raised roadway would be of comparatively small cost, as compared with any of the plans where docks or floating basins are proposed.

"This plan would not only be wholly unobjectionable, but highly advantageous in a sanitary point of view, seeing that the whole space would be kept open, and there would be no stagnant water created, or any deposition of mud or accumulated filth in docks or floating basins, requiring to be removed from time to time.

"It has been suggested by wharfingers on former occasions when the subject of the Thames embankment has been under consideration, that the wash produced by steamboats would largely interfere with the unloading and loading of barges and other craft alongside of an embankment wall, and that therefore an embankment would be injurious to their trade, unless recesses of some kind, or docks or floating basins, were constructed within the embankments. That there is no substance in this objection any one may ascertain by simply observing barges and other craft whilst afloat alongside of a wharf or outside of other barges being loaded and unloaded freely, notwithstanding the passing up and down of steamers, and that during all states of the tide.

"In the plan above proposed the barges and other craft would at all times be afloat, the shores under the river-wall being dredged out to a sufficient depth.

"If the problem to be solved were how (in making an embankment) to obtain the largest money return from the land abstracted from the river, then certainly some such plan as that of Mr. Bidder or of Mr. Fowler might be selected; but I do trust that the open spaces obtained by the formation of embankments will not be permitted to be filled up with extensive and lofty warehouses and other works; on the contrary, it is my opinion, as a member of the

Metropolitan Board of Works, that every effort should be made by the board to keep this portion of the valley of the Thames thoroughly open, in order that the public may ever have the fullest benefit from this open space. It would be highly improper for the present generation to give up the advantages of this open space in the metropolis, simply because a comparatively large money return may be made by allowing the space to be filled up with large buildings. We are called on to spend hundreds of thousands of pounds in making parks. Why are we to permit this great open space, in the very heart of the metropolis, to be filled up, seeing that it may be the means of contributing to the health of the inhabitants, far more than parks at a distance from the most densely crowded parts of the metropolis can be hoped to do?

"I think that the health and general character of the metropolis should, in respect to these open spaces, be far more regarded than immediate money returns, or saving of outlay.

"There are, I think, many objections to all the plans which propose to abstract such an extent of land from the river as will admit of the construction of open water spaces or docks, or closed floating basins with locks.

"The navigation and scour of the Thames above London Bridge would be materially interfered with if there were open water spaces or docks constructed for the tidal waters to flow into and out at all times of the tide, as such spaces or docks would be liable to silt up quickly, or require costly means of flushing to keep them open and free; but whatever might be their construction, they would materially interfere with the uniformity of the stream between London and Westminster bridges, as eddies would thereby be produced which must result in the formation of sandbanks in the river, presenting a constant source of expense in their removal, in addition to that of keeping the docks or open water spaces free from deposit. If, on the other hand, close floating basins were constructed with locks, such a formation of embankment would, in regard to the navigation of the river below bridge, act as if the whole embankment were solid, as by such a construction nearly as much tidal water would be shut out from the Thames between London and Westminster bridges as if a solid embankment of like extent were constructed.

"As a means of compensating wharfingers, such docks or floating basins would, supposing them to be good, only accommodate a few and not the whole of the wharfingers having frontages to the Thames. These few would be those whose frontages are contiguous to where the docks or floating basins can be made; whilst a very large proportion of the frontages, and consequently the wharfingers belonging thereto, could have no docks or floating basins formed contiguous to them, and landing places at a distance from their present frontages would be of little benefit to the wharfingers whose premises are not situated on the margins of the docks or basins. To construct such an extent of embankment on the north side of the river as to include the two first arches of Waterloo and Blackfriars bridges, in order to provide for the formation of docks or floating basins, will add very greatly to the expense, in addition to that of forming and keeping up the docks or basins when formed. Even the construction of the river wall alone will be greatly increased in cost by reason of most of it having to be constructed in very deep water, as compared with one following Mr. Walker's line; and all this additional expense will be incurred in order to give to a few wharfingers a supposed convenience for carrying on their business, and in compensation or part compensation for the injury which it is supposed will be brought about by the formation of an embankment.

"I entertain, however, a confident opinion that this mode of making compensation will be found to be very costly, and give little satisfaction to those who it is wished thereby to propitiate; and it would in my judgment be far more advantageous to pay a money compensation for real injury, where reasonable compensation cannot be made by favourable grants of the right to use the landing quays and covered way in front of the premises, than to go to such a large outlay as will be required to make and keep up docks or basins as a means of compensation; and this to a few only, and not to the many.

"In place of being an advantage to wharfingers to have floating basins or docks or other recesses opposite their present frontages, it will, I think, be found that great loss of time will result in moving barges and other craft into and out of such docks or basins; and it is a somewhat difficult problem to solve and to decide in what proportions different wharfingers are to use the docks and basins.

"After a very careful consideration of the whole question of compensation for injuries which will be done to the trade of the river side premises of wharfingers on the north side of the Thames between London and Westminster bridges, I have come to the conclusion that the trade, with only few exceptions, may be carried on with greater facilities and advantages after an embankment such as I have suggested has been made than is now possible, and the letting to each wharfinger, under favourable circumstances, a frontage of like extent (to that which he now has) of the quay and covered way interposed between his premises and the river, would be a full compensation. At the same time parties ought under no circumstances to enclose the covered way, unless it be with open railings. In the exceptional cases, which are not numerous, viz., those where wharfingers or parties have now the power of lifting directly from barges and craft (when alongside) into their warehouses or buildings, but where the barges and other craft can now only get alongside at certain states of the tide, the question of compensation must be fairly looked at, and this would in most instances be the case even were docks or floating basins to be constructed, as suggested in the various plans, seeing that some of the exceptional cases before mentioned are not in the localities where the basins or docks are proposed to be formed.

"The amount saved by forming such an embankment as I have proposed would be far better expended in giving fair compensation than in making most expensive works for the supposed benefit of the wharfingers, which will require constant outlay in order to keep them up, as it must be assumed that the wharfinger, if he is to have the right of using these works as a compensation, will object to pay for any such expenses.

"William Carpmael, C.E.

"24, Southampton Buildings."

These notes are precisely as they were sent to Mr. Thwaites; they were not expected to come before you; it was merely information which I conveyed to him as a member of the Board of Works. I would state that I have not seen any of the plans brought before you since the report of the Committee of the House of Commons last year, so that I am perfectly unacquainted with what has been done since.

1196. Have you considered the means of forming the sewer?—Yes; that is the essence of every plan.—As a member of the Board of Works I have from time to time taken a somewhat active part in reference to the system of main drainage, and on various occasions when the subject of the north low-level sewer has been before the Board I have always said that it would be proper to construct it in an embankment, if parties either by parliamentary grant or otherwise were making an embankment at or about the time when that sewer required to be made.

1197. Have you at all considered what position you would assign to the sewer in the embankment as regards its distance from the shore?—I should say about the same as Mr. Bazalgette has proposed. I do not think it can be better located.

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1198. I presume that that position would give the greatest facilities in respect to the construction?—Yes; that would be the best position for bringing down the various sewers which now exist, at a convenient inclination into that sewer. It would be as convenient a position to receive them as possibly could be. Nearer the shore the descent might be objectionable in some cases.

1199. Have you considered at all the question of carrying forward the immense traffic which would go along this line of road into the city?—I have only considered it as a general opening, offering great convenience for the transit of carriages and persons travelling in that direction.

1200. You only take them as far as Mr. Bazalgette?—To Cannon Street, supposing the new road suggested by Mr. Bazalgette to the Committee of the House of Commons could be carried out. It would be highly desirable to get an open roadway into Cannon Street, because it would open up the benefit of Cannon Street, which is now more or less a cul-de-sac.

1201. Do you consider it essential to provide means of communication with that street?—I think it is absolutely necessary, and that it ought to be one of the most important features of any scheme.

1202. Is it also an essential point with regard to the further construction of the sewer?—I think it is highly important that the sewer should be carried as near to Southwark Bridge as possible. Near Southwark Bridge would be as good a place as any to enter the land in order to get through the new street, and then to go onward.

1203. You would pass under Blackfriars Bridge and go down to Queenhithe?—Yes. I should do that certainly with a low level roadway as well as an upper terrace way; and if that were well arranged with regard to the present river side property, a great deal might be done to satisfy the wharfingers, because I think that that is the locality where there is the greatest difficulty in regard to the wharfingers; but there are some who think that it may be, or at least there is one who thinks that it would be, a great benefit to the system if they could have an embankment alongside their premises, with an easy mode of access to the Thames at all times.

1204. Would the object as regards the portion between Blackfriars Bridge and Southwark Bridge be facilitated by leaving out the high level road?—I think not. I do not see that the high level road would at all interfere with the traffic below. I think that it would be the means of getting communication with Cannon Street, and I do not see any mode of obtaining communication with Cannon Street except by some such road as that; and I do not see that it would interfere prejudicially with the wharfingers; but on the contrary, they would find it a convenience rather than a prejudice.

1205. Is it not the fact that in those establishments for business there is a good deal more hoisting into the upper floors than in other portions of the river?—Yes.

1206. Would that go over?—No; under. I propose a lower road between Westminster and Blackfriars bridges; but I do not propose any lower roadway on the embankment between Blackfriars Bridge and Southwark Bridge.

1207. You would run your goods at the north side of the high level road?—Yes. I think that from the low level road at Blackfriars Bridge they might be brought either by passing under the arch with the high level and then into Thames Street, avoiding Blackfriars Bridge, or there might be a convenient road made near the gasworks to get up in that way, so as to have two roads to get upon Blackfriars Bridge for heavy traffic.

1208. You would have an inclined road, if I understand you, from the low level up to the high level of Blackfriars Bridge?—Yes; but I should go either into Thames Street or William Street, avoiding going directly into Blackfriars.

1209. You would avail yourself of the advantages of opening up a new street to carry on your sewer?—Yes; and it would be highly desirable to do so. I have not had an opportunity of talking it over with Mr. Bazalgette, and therefore I am speaking without having maturely considered the point; but I entertain a strong feeling that that would be the proper place to take the sewer.

1210. (*Mr. Thwaites.*) Do you propose to terminate your embankment at Blackfriars Bridge?—No, not to terminate the embankment, but to carry the embankment on to the point where Mr. Bazalgette proposed to terminate it last year, but not to carry the lower road as far as Queenhithe; only as far as Blackfriars Bridge.

1211. You would have a solid embankment from Blackfriars Bridge to Queenhithe?—Yes.

1212. Would that be devoted to the use of the wharfingers?—It would be devoted to the use of the wharfingers underneath the terrace road or the raised road.

1213. You propose an upper road between those two points?—Yes.

1214. Do you think that the wharfingers would be satisfied with a solid embankment under which you propose they should have facilities for transmitting goods from the barges to their wharves?—I think that they would. I think that by tramways and other convenient arrangements their business might be carried on with the greatest possible convenience.

1215. You would not only give them the advantage of the space between the river and their own wharves, but you would offer them the facilities of a roadway in front of your wharf by your upper road?—Yes.

1216. Do you think that those two advantages would compensate the wharfingers for the loss of their water access, by means of which they hoist their goods to various floors?—I think that they would fully compensate them. After discussing the matter with Mr. Kennard, a short time back, whose wharf is between Blackfriars Bridge and Southwark Bridge, and whose case is one of the exceptional cases I have spoken of, he made the observation, that he believed sincerely that two years after such an embankment as I have suggested had been made, if you asked the wharfingers to go back to the original state of things, they would ask more compensation to go back than they will now ask, supposing my view was carried out, and I quite agree with him.

1217. He speaks with more confidence as to the result taking place in two years than he does of convincing the wharfingers at the present moment?—Yes. I had a discussion also with another gentleman, who was adverse to having an embankment at all, but after discussing it some time, and having, I think, satisfied him that the traffic might be materially aided by mechanical appliances, and the old system of carrying everything on men's backs be got rid of, he thought that business might be carried on with more facilities than it has ever been carried on on the banks of the Thames.

1218. In your communication with the wharfingers in discussing this question with them, have you ever considered the difficulty, if any which would arise from the front roadway being pushed into deep water, and the barges more exposed to the tidal action than they are at this moment?—The wharfingers whom I have spoken to have never apprehended any inconvenience of that sort at all, nor do they see any inconvenience in the proposal.

1219. I suppose that you think it necessary to dredge the river in carrying out your scheme?—Yes; that I assume to be a necessity. First, to keep the water capacity of the Thames above London Bridge equal to what it now is, in order to keep up that state of things which is below London Bridge; and, secondly, there should be always waterway, and no mud banks for craft to lie alongside, and to float alongside at all times of the tide.

1220. (*Captain Galton.*) You said that the wharfingers would prefer at the end of two years to have the embankment if it were made, rather than return to the existing state of things?—Yes.

1221. Do you think that it would be possible to postpone the paying of compensation till two years?—It would be highly desirable; but that is a question of parliamentary jurisdiction of which I do not profess to know anything.

1222. You object to docks?—I object to docks very strongly, first, upon the ground of the large cost of construction, and next that I do not think that they would be the means of compensation to the wharfingers.

1223. Would not they enable barges to remain floating at all times of the tide, and thus be of assistance to wharfingers?—They would; so they would on the outside. They would remain constantly afloat in their place, and so I consider that they have advantages in common, with the exception that one is in quiet water, and the other in a flowing stream.

1224. What other objections have you to docks?—I object to the large cost of keeping them up.

1225. Under what heads would that cost arise?—First, the repairs; secondly, the opening and shutting of the gates, and the arrangement and management of craft going into and coming out of the dock; seeing that the craft go up to their proper places, and hold their proper places during the time of loading and unloading, and that they get away as soon as possible. That must be under some one's superintendence and direction, otherwise there would be endless confusion. Then there is the expense as regards cleansing, which would be always a costly matter. Then, in small docks of that kind, not only would the silting up be considerable, but there would be a quantity of filth which would be thrown in there, and more or less kept afloat, and there would always be a large quantity of stagnant water, because you cannot let out and take in a quantity equal to the capacity of those docks during each time. Supposing that there were an open watercourse merely, walled off, with openings into it, the objection to that is, first, that they necessarily will silt up and make bars on one or other or both sides of the entrances; and the second objection is, that the watercourse will silt interiorly; and, moreover, it would take away a very large space of the river in order to make it, and I do not think that when you have made it, seeing the facilities of going in and out are but small, there would be any equivalent convenience or compensation to those whom you want to benefit.

1226. Mr. Bazalgette urged that one of the advantages in the docks between Blackfriars Bridge and Westminster Bridge would be that they would give an enormous additional space for the barges to lie alongside of the wharves?—I cannot see that myself; on the contrary, the large quays which may be made from Blackfriars Bridge to Westminster Bridge would be nearly two miles of space, and there you can transact all your business; whereas the margin of the docks is small as compared with the embankment, and the docks would not be in the locality of the properties of those parties whom you want to compensate by letting them have those landing places. Moreover, all that is built at a very considerable expense as a means of compensation to those parties, and all must be kept up at the public expense.

1227. You think that any space which is reclaimed from the river by a solid embankment should not be covered over by buildings?—That is my opinion very strongly.

1228. That opinion is based upon sanitary grounds?—Upon sanitary grounds, and also upon the ground that the general character of the great city of London would be materially damaged by such a series of buildings being constructed.

1229. Do you think that a large space is very much required there?—I think it is; it is very densely populated on either side of the river, and to contract the air containing space would in my opinion tend to prejudice the healthiness of that portion of the metropolis.

1230. You said that the docks would not be a compensation? Do you mean that the wharfingers would not consider them a compensation, or that they would not in point of fact be a compensation?—I do not think that the wharfingers would consider them a compensation; a few might consider them so, but a large portion would not. I think that they would not be a means of compensation to them, because I believe that they could carry on their business without them with more facility than with them, as they would not be able to get their barges in and out of those docks with the same facilities as they could get up to and land or load goods alongside of the Thames embankment, which they could do at all times of the tide.

1231. Would the barges be able to lie alongside of the Thames embankment as they do now alongside of the wharves?—I think that they would.

1232. In winter do you think they would lie there securely?—Under all circumstances. I do not remember any barges being carried away, even in the main stream, to the prejudice of the trade of the metropolis between London Bridge and Westminster Bridge.

1233. Still you think that the creation of the embankment in the manner you suggest would revolutionize the trade completely, and would cause the unloading of barges more rapidly?—I think that they would find in regard to carrying on their business economically that it would be desirable so to load and unload quickly. The Thames ought not to be, to that extent to which it now is, a means of warehousing a large quantity of material in barges; they do not pay any ground rent or any other rent for so warehousing their goods. I do not think that one large holder of barges should have that power. If everybody had that power the Thames would be nearly covered.

1234. Is not a barge an expensive warehouse?—I should think not, where a party has a large quantity, and manages them himself.

1235. You think that the repairs are not very considerable?—I think not.

1236. You think that the open spaces would form an additional park, in fact?—Yes.

1237. The principal portion of that open space would be near Hungerford Bridge?—Yes.

1238. That is near to where the public have already large parks?—They have not river-side parks. It would be very readily accessible to parties who already have access to parks, no doubt, but that is not a good reason for making a close unventilated spot where there is a large well-ventilated spot at the present time.

1239. The main argument is the sanitary one; the importance of maintaining a large open space?—Yes.

1240. (*Captain Burstal.*) You seem to have a good deal considered in your proposition the navigation of the river?—Yes. I used to row a good deal upon the Thames, and I have been a good deal on it ever since I was a youngster.

1241. Do you think that the wharfingers would be benefited by the adoption of the mode of unloading outside the wharf, and trucking under the terrace roadway?—Not where they wished to convey the goods into the warehouse, but where they could back their carts and waggons up to the margin of the embankment, and there land the goods directly out of the barges or craft into the waggons or carts, they would be largely benefited, in my opinion.

1242. I apprehend that your view is, that the barges would drift up from the pool where most of the cargoes are loaded, and would get alongside the embankment at a very early period of the flood tide?—At the earliest possible period of the flood tide, when beginning to move, the barges would get alongside; whereas if they had to enter docks the

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difficulty of getting in would be considerable, because they would have to wait the time of the tide for floating over the sill, of whatever entrance there may be.

1243. Therefore you think that a barge would be unloading alongside of the embankment during the time that she might be waiting to get into the dock?—Yes. I go further than that; I believe that when the trade is developed fairly and properly, under such circumstances there would be more steam tugs to bring up barges, and to take them back again.

1244. If that was the case a barge might get alongside the embankment an hour after low water, and she might be unloaded that tide and go down the next tide?—Yes.

1245. But that would not be the case in a dock?—No. You cannot accomplish that in any other way than by having them come up alongside and unload.

1246. Suppose we take a barge coming down from the upper district?—That would be subject to the same state of things. They might go to London Bridge, or wherever their destination was; they might get there towards low tide; they would get alongside instantly, and if all things were ready to receive them they could reload, and they might take the turn of the tide and go up again. I must say, without exception, that the navigation and the transaction of business on the Thames by barges and craft of that kind is the slowest and most inartificial of any system which I know in any part of England or any part of the continent. In England, certainly, every river is infinitely better managed and better worked than the Thames.

1247. (*Chairman.*) That state of things would all be remedied by having five or six feet of water along the wharves?—Yes.

1248. (*Captain Burstal.*) You seem to limit the projection of the embankment, with a view to keep the river below London Bridge in the same state as it is now; what is your object in that?—The supply of water. If you diminish the tidal capacity in the Thames above London Bridge you will not only not get sufficient scour, but you will not have the quantity below London Bridge which you require, and you will materially interfere with the traffic below London Bridge.

1249. By decreasing the velocity of the current?—Yes, and the character of the current altogether.

1250. You are desirous of retaining a reservoir in the neighbourhood of Westminster?—Yes; and in addition to retaining a reservoir for containing tidal water at Westminster, I want also that the stream should not be of such a speed as to interfere with the craft.

1251. Have you ever thought of the amount of increase of current which would be likely to take place if the embankment were made as you propose?—If you increase the quantity taken in on the north side, and straighten the river, reducing it to a standard of 700 feet wide, as some of the plans have proposed, the stream would run at three miles an hour; whereas I should like to see the stream, on the average, between 2¼ miles and 2½ miles. That would prevent silting, whilst it would give every facility for working the craft up to and from the embankment.

1252. You seem to have an objection to docks. The question is, whether in winter time, when ice is formed, docks would facilitate the traffic. Do you think that ice would form inside the docks?—I have no doubt that even the frost we had last winter would prevent the use of docks in any way whatever.

1253. The communication with the wharves would be stopped up entirely by the ice?—Yes.

1254. Such ice as that of last winter would stop up the river navigation, would it not?—The river was not stopped up during the whole time of the frost; they were enabled at certain periods to get the barges down.

1255. If there were a winter such as there was last winter docks would be perfectly useless?—Yes.

1256. (*Chairman.*) The docks might very easily be stopped by severe frost; but supposing that the ice comes down with the velocity of the current, would not it carry away the barges?—I can only answer that by what I have already stated. I have been across the river day by day for 35 years, and I have never yet seen a barge drifted, even out of the stream way, by the ice; and I have seen the frost of 1814 and each succeeding year up to the present time.

1257. Have you really watched the operation of the ice in those severe frosts?—Yes, constantly, from a very early period.

The Temple Gardens, I think, is a very important position on that side of the Thames. I think that the Temple Gardens might be largely improved by adding that which they have not got now, namely, a cariage roadway from the raised terrace into the Temple Gardens; and if they chose to add character and style to their place, they might make a noble entrance of it by making a gateway leading into it. I think that if the benchers were permitted to bring out their garden to within a few feet of the raised terraceway and of the lower roadway, and there was a terrace walk along there of a character consistent with the other structure, it would have a very good effect from the whole of the gardens, for those walking on the terrace or in the gardens would have a perfect view of the Thames at all times. As regards the upper portion between Westminster Bridge and Hungerford Bridge, where an aristocratic class of building obtains, I think that that would be largely improved by giving that portion a park-like character. So far from deteriorating the property, it might be elevated in character from what it now is into a character which it ought to assume. If it were made parklike, I think that the public, having an open space of that kind to go to from time to time, without having to go to St. James' Park, would find it an agreeable recreation when they had an hour to spare.

1258. You would start the high level road on the level of Westminster Bridge?—So as to get access into Bridge Street in the most convenient way.

1259. You drop down so as to pass under Waterloo Bridge?—Yes; getting a minimum headway of 11 feet if the whole covered way were continued from 3 to 4 feet above Trinity high water; but you might dip the higher way as well as the lower way when you come under the bridges.

1260. How much could you dip the lower road so as to avoid its being flooded?—You have got the sewer below. I think that you might dip the lower road to Trinity high-water mark.

1261. (*Captain Burstal.*) Retaining the coping of the river wall at 3 or 4 feet above Trinity high-water mark?—If you incline it to about 20 inches from the river downwards for about 70 feet, and you had a kurb of 10 or 12 inches, commencing at the side of the roadway, you might have a roadway as low as Trinity high water with perfect convenience, because your sewer being below, and there being side entrances into that sewer, it would carry off all the water at all times.

1262. (*Mr. Thwaites.*) Are you aware that the benchers of the Temple, in building their reading room and library, had agreed to the probability of the Thames embankment being formed in front at some considerable height?—I have heard so; but I have no knowledge of it directly.

1263. (*Mr. Hunt.*) Take the terrace at Somerset House; your upper road would be on a level with that?—Yes.

1264. You would entirely shut out the architecture of the basement of Somerset House?—You would, unless you chose to bring it out, and still retain the character of that portion of it, because it would not be wanted for landing quays; it would

be a space of ground which you might use in any way you pleased.

1265. Would there be any communication between your road and Waterloo Bridge ?—I should avoid joining any of the bridges on a level, in order to avoid two lines of traffic passing each other at right angles.

1266. Would you have foot passengers pass ?—Yes. I propose wherever you can get at roads at right angles leading into the Strand and other streets, to give communication so that any traffic which wanted to go north should have an opportunity of doing so.

1267. You have not formed any estimate of the cost of your plan ?—I should say that a construction such as I have suggested on the north side would not exceed perhaps 600,000*l.*

1268. The quay and the roadway ?—Yes.

1269. (*Chairman.*) Does that include compensation ?—No. I have not taken compensation into consideration at all. I sincerely believe that if the thing is properly dealt with, and if Parliament will give you power to defer compensation, practically speaking you will have no compensation ; but, on the contrary, the wharfingers would be very sorry to go back to the old state of things.

1270. (*Captain Burstal.*) After two years' trial ?—After less than two years' trial.

1271. (*Mr. Hunt.*) Suppose you had a coal wharf at your level, how would the cart get away into the Strand ?—What I should say would be this, every wharfinger would be able to back his waggon under the covered way up to the margin of the river, and having loaded it, he would go either to the right or to the left along the lower road, and then ascend any of the inclinations into the Strand which might be desired.

1272. You are going to make a park at the Adelphi, for instance ?—It will be only the extra 100 feet. I retain 30 feet for the lower roadway at all times. At Somerset House I give up all to them, except an under roadway for all the traffic to get east and west.

The witness withdrew.

Mr. Joseph Sproul examined.

1273. (*Chairman.*) Will you explain your plan to the Commissioners ?—I may say that I have been several years engaged in works of this kind. Beginning at Westminster Palace, I propose a roadway 100 feet wide, 25 feet next the water being for landing goods upon, and 75 feet for a thoroughfare, and over the 25 feet there would be a railway. (*The witness pointed out his line of embankment on the plan.*) The banks on which the roadway would run would be built with stone; granite at first would be dearest, but cheapest in the end ; and there would be steps at intervals for the landing of passengers. There ought to be no piers for steamers. Every part of the river wall ought to be looked upon as a line of quay throughout. The water in some parts of the front would be deeper than in others, to accommodate sharp-bottomed vessels or steamers which would require to float alongside at low water ; six or seven feet below the level of the lowest tides would be sufficient. That additional depth of six or seven feet would not be necessary for the whole distance, because most craft above the river are flat-bottomed vessels. So far as providing for the wharfingers goes, I consider that my plan improves their position.

1274. You give them a wharf outside adjoining the river ?—Yes. I erect cranes, and that saves the expense of carrying their goods in-shore. Wherever there was a coal wharf, timber yard, or other yard, I would have a covered way for the use of people carrying on those businesses, under the buildings which would be erected afterwards by private individuals. In regard to carrying off the rain water, I think that the rain water can be carried off easily under the level of the main sewer. I believe that the sewer is on the level of low water. I would run the rain water into the front of the quays, the bottom of those quays being six feet below the level of low water, consequently the rain water running out of those sewers would run safely into the river.

1275. What would be the relative levels of your two roads ?—It would be one level.

1276. How is all the traffic which is unloading from the barges to go across the main road ?—I would provide sidings from those lines of tramway to the wharves.

1277. Your road becomes a quay ?—Yes ; 25 feet wide for the landing of goods; that would leave 75 feet for the street.

1278. One great object which the Commissioners are required to look to is an uninterrupted broad road, which would relieve the traffic of the metropolis, but if that is to be made a wharf also, that object can scarcely be carried out ?—I have marked out 100 feet, 25 feet next to the water for the landing of goods, that leaves 75 feet for the other thoroughfare from end to end of the river.

1279. That 75 feet would be constantly crossed by traffic landing from the barges ?—Trucks passing over the street at right angles would certainly cause some interruptions; but in a noble thoroughfare of 75 feet wide they would be very slight, considering the room they would have to shun each other. But all these trifling inconveniences would be done away with by simply running the merchant's tramway in a slanting direction into his premises from a convenient distance either above or below his establishment. In moving from the quay in this sloping direction, they will, to such an extent, go along with the stream of traffic as not in the remotest degree to disturb the passage of vehicles. In my reply I may add that the leading ideas of my plan are borrowed from the embankment of the river Clyde at Glasgow. There each side of the river running through the city has broad streets exactly as my plan describes, walled in the front with stone, and as quays sunk deep for maritime commerce. The walls or quays throughout are closely packed with shipping, constantly loading and unloading to and from different parts of the world. These river streets are therefore constantly crossed by cargoes passing into stores to a much greater degree than would be in the Thames, at least above London Bridge ; yet, though the system has been in constant work for half a century, no interruptions, as a general rule, are ever so caused in these busy thoroughfares. I would strongly recommend the example of the embankment of the Clyde at Glasgow as the best model in the world to be applied to the embankment of the Thames. Your honourable Board have before you a great number of plans from eminent men ; but a visit to that port would convince you that most of them would sink into insignificance in comparison.

1280. When you come to the bridges, how should you be then ?—I should run the lines under the arches, by taking a low level, 13 feet, which is high enough for the landing of goods; that would meet every convenience ; it would give sufficient headway, with the exception of Westminster Bridge. This line of railway would go from end to end of London, and would be looked upon as a trunk line of railway for the metropolis.

1281. Have you considered all the difficulties likely to arise above and below London Bridge ?—Yes. The railway can run clear of the top of the arches at the elevation I propose. The railway would take up no ground, being on iron pillars.

1282. (*Captain Burstal.*) How do you cross the entrances to the docks ?—Engineering skill would

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overcome all those difficulties. The roadway itself would, very likely, be crossed by drawbridges. So far as the railway is concerned, I think that an opening bi-valves hung upon hinges meeting as a gateway would answer the purpose. Those docks would be open for an hour, which would answer the purpose of the shipping.

1283. You propose to press all the vessels now carrying on business alongside the wharves into the river?—Yes.

1284. How do you deal with in-shore traffic; those vessels now lying alongside of those wharves would be pressed out into the river; according to this plan your traffic would come out and join the vessels lying in the tiers, I presume?—Suppose the river is 700 feet wide, I allow 150 feet on each bank for vessels to be moored alongside; you have still 400 feet left.

1285. Then, for vessels inside the tiers, and all those which wanted to unload quickly, how would they get alongside, so as to unload and get away again as soon as possible?—Had I attempted to carry out my plan from end to end of the river, I would have proposed from London Bridge to have immense maritime quays for shipping from every portion of the world. At London Bridge I begin with a depth of water of six feet at the side of the quays; the river walls get gradually deeper and deeper till I get a depth that would accommodate the heaviest tonnage that comes into London. I would have extended the quays for such a distance as to meet the present requirements of commerce, and perhaps its requirements for 30 years to come. Below London Bridge I have a depth, according to the plan, of from six to ten feet; that is sufficient for the vessels which discharge at that point of the river.

1286. Are you aware that in that part of the river the lower pool is reserved for the use of colliers which discharge into barges?—I am not aware of that; at the same time I consider that there would be no difficulty. I think that those quays which I propose to be erected would afford quite sufficient accommodation for the requirements of commerce, and I consider that there ought to be a tonnage rate put on all vessels, from the lowest craft upwards.

1287. On barges?—I will explain my meaning. Suppose a cargo of coals arrives in the river, the accommodation you give by carrying out my plan will perhaps save 30*s.* in wages. I should say that they ought to pay 10*s.* in the shape of tonnage.

1288. That would put another coal tax on?—I only ask that they should pay for value received.

1289. Are you aware that all vessels coming into the port are now compelled to pay tonnage dues?—They pay tonnage dues for very imperfect accommodation; the accommodation which I would give would be of the most perfect description. I have made a calculation of the profits and losses of the undertaking, should it begin at Westminster Bridge, and extend three miles downwards, ending about a mile below London Bridge. But as a preliminary I may observe that the plan marks out a line of building ground, 55 feet deep, fronting the river from Westminster Bridge down to below Blackfriars Bridge, about 1½ miles in length. As this frontage building ground would front a grand thoroughfare, and be on a line with gorgeous palaces, it would likely be equal in value to any other building ground in London, and from the fabulous prices it would command the speedy erection of ranges of palatial buildings, adorned through the whole extent with the most splendid shops. If I was to value this frontage at a price it would undoubtedly now attain to I would put down its purchase at no less than 100*l.* per yard, but I will greatly undervalue it, so that my calculations cannot be questioned, and put down its value on the humble level of a second-rate street, viz., 16*l.* per yard, which will be equal to the yearly value of 4*l.* per foot frontage, which, deducting a tenth for cross streets, gives a yearly income from the whole 1½ miles of frontage of 28,512*l.* Again, in the rear of this frontage there will be a broad extent of building ground reclaimed from the shallow flats of the river, which, if laid out in blocks of building-ground 100 feet wide, with streets 50 feet wide, would afford altogether 12,733 feet of building frontage. As this ground principally lies betwixt Somerset House and Westminster Palace, and contiguous to Whitehall, I might put it down at about the value of ground in the last-mentioned place; but I will only value it at 1*l.* 10*s.* per foot frontage yearly, and at this low figure it will bring in an income of 19,099*l.* a year. Lastly, if we value the use of the ground for three miles of railway at 150,000*l.* per mile, a very low figure for the most valuable line in the metropolis, the full value of the three miles will be 450,000*l.*, which at 4 per cent. brings in an income of 18,000*l.* If we add, therefore, the incomes of the three separate sources they amount to the total yearly income of 113,232*l.*, which, valuing money at 4 per cent., represents a capital of 2,830,800*l.*

1290. (*Chairman.*) Have you considered the sanitary question, of covering all this ground with high buildings?—We have a large river, which will give plenty of air; the river is to be purified; and you have the parks near. Referring to the expenses that must be incurred if there be altogether three miles of embankment to be done, and the two miles above London Bridge, as I propose, sunk at steamboat stations 6 feet deeper than low water, the greater portion that is left sunk only below low water, and the remaining mile below London Bridge sunk throughout from 6 to 8 feet under low water, I put down the whole expense of the embankment at 510,000*l.*, or 170,000*l.* per mile. This will include the sinking, the filling up granite fronts to the walls, and the perfection in every respect of the works throughout. The next and last item of outlay is the purchase of about 1½ acres of very valuable property along the edge of the water between London and Southwark Bridges, and compensation for widening the street along here, and down to the end of the work; but as I have had no time to value it I am in the dark as to what it would cost, but if I at random put it at the much too high figure of 300,000*l.*, I will err on the safe side. Total outlay, 810,000*l.* Deduct this, the total expenditure, from the 2,830,800*l.*, the capital that the plan develops, and there is a balance of profit of 2,020,800*l.*, or, in other words, for every pound the plan expends there is a return of 3*l.* 9*s.* 10*d.* Valuing both the debt and capital at 4 per cent., there would remain out of the 113,232*l.*, the yearly income, after deducting from it the interest of the debt, of 80,832*l.*, which if applied in extinguishing the debt would wipe it all off in about nine years, leaving the handsome yearly income free of incumbrance for the benefit of London for ever. I have arrived at the above conclusions by the most careful inquiry, by the judgment of others, aided by my own extensive experience; and having on purpose greatly undervalued the property and slightly overvalued the expenditure, I can boldly pronounce them to be founded on facts that cannot be questioned. Indeed I court inquiry into these calculations, and all the leading principles of my plan. As a plan it provides a splendid promenade, wide enough for both quays and street; it safely drains your rain water; it disturbs no existing interests, but leaves them in a much better position than it finds them; it bestows upon you, without a shilling of outlay, a railway worth half a million sterling, to be so constructed that instead of being an encumbrance it would, as a fringe round the embankments, be one of the gaudiest ornaments that human ingenuity could invent; and, lastly, what is still more cheering, the work, instead of being carried out at a loss, will be done at an enormous profit, that may afterwards be devoted very advantageously to the embankment of other portions of the river.

The witness withdrew.

Mr. Stephen William Leach examined.

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1291. (*Chairman.*) You appear before the Commissioners in order to give them information upon certain points which are embraced in all the plans, and which require consideration in investigating the plans. Would you state generally what opinions you have formed respecting the plans which have been under the consideration of the Commissioners. First, with reference to the line?—I presume that the lines generally adopted are those which were before the Committee of the House of Commons last year, and therefore, though I have not seen the plans before the Commission, I can form an idea of the general direction and extent of the lines. I believe that the point which seems to regulate them generally is Waterloo Bridge. Mr. Walker's line extends to the first pier of Waterloo Bridge. Several other plans propose to take in the first two arches. If the wharf trade is attempted to be carried on without the line, by taking the second arch a great deal of inconvenience would be found, not only in bringing the barges alongside the line, but they would always be afloat at that line. It would be outside the low-water line, and consequently the barges would always be afloat. That is considered by the wharfingers to be a great disadvantage: for this reason—at present the barges are on the ground the greater part of the tide; whilst aground they are still, and can be loaded and unloaded without inconvenience; but when they are afloat the wharfingers complain very much indeed of the inconvenience which they find from the motion of the barges caused by steamboats. The wharfingers have several times asked me whether it would be possible to make some regulations by which the speed of steam vessels might be reduced. That is one objection which would apply to an embankment carried out to that extent. Another objection would be the displacing of the tidal water. In principle it would be very undesirable to do that. Whether the embankment carried to that extent or the displacement of tidal water would be the smaller evil of the two, is a question. I have the quantities which would be displaced, both by Mr. Walker's line and by the line which comes out to the second pier of Waterloo Bridge. From Westminster Bridge to Queenhithe the total quantity of tidal water displaced by Mr. Walker's line would be 22,151,859 cubic feet. If you take the line to the second pier of Waterloo Bridge, according to the plan which was submitted by Mr. Bidder to the Committee last year, it would be 38,000,305 feet.

1292. I suppose you are aware that it has been proposed to compensate for that by dredging both in the docks inside the road, and in sinking along the face of the embankment?—Yes.

1293. So as not to take anything from the sectional area of the river?—I think myself that hardly any compensation would be got by dredging any part of the river here, but I do think that there might be compensation by dredging in the upper part of the river.

1294. (*Mr. Thwaites.*) Do you think that the compensating by dredging in the upper part of the river would be equal to the 28,000,000 and the 38,000,000 to which you have referred?—Yes; it would be practicable to do it.

1295. (*Chairman.*) Would it affect the velocity of the current in the narrower part?—Not to any material extent. With respect to the velocity of the current, I take it that the best measure of it is to be found at Southwark Bridge. The tide rushes through it with considerable velocity to fill that large space at Hungerford Bridge and elsewhere. You have a greater velocity at Southwark Bridge than you have anywhere else, and that is simply for the reason that there is a large tidal area to be filled. If you were to abridge that large tidal area it would have the effect of slackening the current at Southwark Bridge on the flood.

1296. Higher up the river it would be increased?—Yes.

1297. Will you state what you consider a fair and good velocity to obtain?—I should think that 2½ miles an hour would be a very good current. Then there is another reason which would influence me in preferring a line out to the first pier of Waterloo Bridge; that is, that it would admit of an embankment on the south side of the river, or rather, would interfere less with an embankment on the south side of the river than if the line on the north were carried out further; that would have an important bearing on the question.

1298. What should you consider a good breadth between the wharves on the north and the south shore?—If you go back to Southwark Bridge, it is rather confined there; it is a little over 600 feet there; but 800 feet or 900 feet, as you have at Westminster, would seem to be ample, and you might take off a large piece from the north shore.

1299. The set of the current you must have studied?—Yes.

1300. How would that be affected by the embankment, especially upon the north side?—The force of the current would set upon that embankment strongly.

1301. Would it create an inconvenient scour to the piers of Waterloo Bridge or Hungerford Bridge?—I should apprehend that if such an embankment as that were carried out, there is a good deal of shoal, both below and above Waterloo Bridge, which would be removed by dredging; that must be part of the plan; and that, I think, would tend to equalize the current.

1302. You have just mentioned dredging; would you give us a little idea of the expense of dredging?—I estimated last year, when the schemes were before the Committee of the House of Commons, that in order to get water to the foot of the embankment which is generally called Mr. Bidder's embankment, the expense of dredging that, so as to bring the water to the foot of that embankment, and to remove the shoal below Westminster Bridge, and the shoal above and below Waterloo Bridge, would only be about 10,000*l.*

1303. Where would you deposit that?—I assume that that would be required for filling up the embankment.

1304. (*Mr. M'Clean.*) How many yards would it be?—156,000 yards.

1305. (*Chairman.*) To what extent would the dredging compensate for the sectional area taken off by the embankment?—So far as the embankment extended, to a very slight extent indeed. If you removed the shoals which are above the surface now, at low water, you would provide so much additional tidal area; but that would be to a very limited extent. It might also have this effect, that if you carried the dredging up to Westminster Bridge, instead of having a tidal range of 17 feet 9, as it is now, you might get it up to 19 feet 6, as it is at London Bridge; consequently the surface of the water, at low water, would be depressed, and there would be an increased tidal area got, though that would be but small.

1306. You would compensate chiefly by dredging in the upper part of the river?—Yes.

1307. Do you mean above Westminster Bridge?—Yes; it might be carried up to Teddington, and would be very beneficial to the navigation of the river.

1308. Is there any inconvenience sustained by the navigation from the shoals above Westminster Bridge?—Not till you get to Battersea Bridge, but above that, it is very great. The year before last, which was a short water year, I heard instances of persons being five hours getting from London to Kew in a steam-boat.

1309. (*Captain Burstal.*) The general traffic of the river, in the upper part, is conducted by tow-horses, before high water, is it not?—Yes; if dredging were carried on there, it would bring the tide in sooner, and that would be an advantage.

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1310. (*Chairman.*) Do you know the relative levels of high and low water between London Bridge and Teddington ?—Yes. The range of the tide at Teddington is about five feet at spring tides ; that is five feet between high and low water. At Kew Bridge it is about 11 feet.

1311. What is the range at Westminster ? — 17 feet 6 ; at Putney it is about 13 feet 6.

1312. What is it at London Bridge ?—19 feet 6.

1313. What would be the difference in the level of the top of the tide ? — In the absence of land-water there would be very little difference ; but in times of land-water the surface of the water, at high water, is considerably higher at Teddington than at London Bridge ; it would vary.

1314. (*Captain Galton.*) Is not there as much as three feet difference ? — I dare say that there would be quite that in land-water time.

1315. Can you tell us the difference between London Bridge and Sheerness at high water ?—It is two feet higher at London Bridge.

1316. (*Mr. Thwaites.*) You have seen the several plans for the embankment of the Thames, some being for a solid embankment, and others for an embankment with docks, for the accommodation of the wharfingers ? Do you think, with your knowledge of the river, and the trade carried on, that it would be possible to form a solid embankment, and yet offer facilities for the trade being carried on as it is now ? — I think that it would be very difficult indeed.

1317. What are the difficulties which strike your mind against a solid embankment as compared with tidal docks ?—It comes again to the question of the extent out. Those plans contemplating the establishment of docks are those which come out to the second pier of Waterloo Bridge. I think that it would be difficult to dock barges in a stream which would be running at the rate at which that would be running.

1318. You mean it would be difficult to enter the dock gates ?—Yes ; and I think that it would be almost impossible within any reasonable expense to keep those docks clear of mud ; and I doubt very much whether there would be any material advantage to the trade in having those docks.

1319. Taking an inner line of solid embankment, in your opinion, would give an amount of accommodation to those wharfingers beyond that which would be provided by the docks ?—Yes. My opinion of it is this,—you might adopt a line, say something like Mr. Walker's line ; and that would really interfere with so comparatively small an amount of wharfage property, that the whole wharf property might be removed; that the embankment from Scotland Yard as far as Whitefriars Dock, which is the extent I mean, might be carried out with very little interference to wharf property ; and that might comprehend all the objects which the Thames embankment is usually understood to embrace.

1320. When you speak of removal, you mean that the trade carried on at those docks might be removed to some other part of the river ?—Yes.

1321. On the north bank or on the south ?—On the south principally.

1322. Take for example the coal trade carried on at or near Hungerford Bridge. Could that trade be carried on with equal advantage to the traders and to the general metropolitan community on the south bank of the river ?—I do not think that it would make a material difference. On the Surrey side of Blackfriars Bridge there are coal merchants (I refer to Messrs. Cory, and others,) in a very large way of business. I see their coal waggons in all the northern parts of London ; they appear to be able to extend their business into those parts of London without difficulty; you see their waggons quite as frequently as those of the coal merchants in the neighbourhood of Scotland Yard.

1323. Are you of opinion that if a solid embankment were formed with a roadway on the upper part, giving the wharfingers access to their wharves by means of an arched way underneath the roadway, by which they could convey their goods from their boats and barges by means of tramways underneath to their wharves, it would be equal to the advantages which they now enjoy with the waterway close to their wharves ?—No, certainly not.

1324. Supposing the width of the road to be 100 feet and the breadth of the archway 30 feet, the additional amount of stowage which they would possess in that covered way, as well as the means of conveying their goods along the tramway, would not be a compensation for the wharfingers ?—No.

1325. Not if they had the access by a high level roadway to the upper part of their warehouses as well as by water ?—I hardly think that it would; it would involve a great deal of expense to carry it out. It would be all extra to what it is at present.

1326. Supposing you adopted Mr. Walker's line, would there, in your judgment, be any difficulty in keeping their barges safe against the action of the tide, secured to the river wall during the time they were loading and unloading ?—I think that they would be at a disadvantage compared with what they are now.

1327. Now they remain some time upon dry ground ?—Yes.

1328. The barge is exposed to an immense surface; in the other case it would be constantly afloat ; it is simply the question of securing it during the time of loading, is it not ?—The wharfingers are exceedingly particular to keep their barge beds level; on the other hand, if they are always afloat there is injury from striking against the wharf front, and against each other, which they would do every time a steamboat passed.

1329. Keeping to Mr. Walker's line, do you think that the motion of the steamboats would be sufficient to create the disturbance which you fear ?—Yes, I do. Mr. Walker's line as originally intended contemplated the formation of recesses where the barges should lie, especially where the trade demanded a good many barges ; and that did not contemplate a roadway.

1330. You know the opinion of the wharfingers generally; are they favourable to inner docks ?—I believe not.

1331. Do you know their objections to inner docks ?—Their objections are the difficulty of access to the docks, the limited time within which they could get into and out of the docks, and the mudding up which they would be subject to.

1332. They would be unable to enter at all states of the tide ?—Quite so.

1333. Do they fear that there would be a considerable amount of deposit in those docks ?—I have heard that opinion generally expressed ; but I can form a good idea of it from the docks and recesses which were left in the Chelsea embankment ; there were several docks formed in that embankment; the last time I saw them they were very deep in mud.

1334. Supposing that there were no tidal gates, but simple openings, and that the docks were as much subject to the tide as the river itself, the tide would enter without interruption, the docks having a gradual fall from the wharves to the sill at the entrance; are you of opinion that the action of the tide would be sufficient to keep those docks clear from deposit ?—No, it would not.

1335. Supposing that you dredged in the upper part of the river to an extent equal to the solid embankment which displaces the tidal water, what, in your judgment, would be the expense of that dredging ? You have told us that the quantity of water which would be displaced by Mr. Bidder's and by Mr. Walker's line is in the one case 22,000,000 cubic feet, and in the other 38,000,000 cubic feet ; as compensation for that, you would dredge in the upper part of the river ; have you formed any estimate of the cost of that dredging ?—I am not prepared to say that it would admit precisely the

same amount of tidal water that was excluded, but it would afford fair competition, as nearly as I can judge; it would not cost more than 24,000*l.*

1336. And that dredging would greatly improve the navigation of the river above Westminster Bridge? —Yes.

1337. And especially above Battersea Bridge?—Yes.

1338. And that admission of tidal water into the upper stream would increase, in your judgment, the scour of the river generally?—It would preserveit.

1339. Has your attention been called to the part of the river between Southwark Bridge and London Bridge?—Yes. I know it well.

1340. Do you think that it would be possible, having regard to the improvement of the navigation of the river, to embank it between those two points? —I think not.

1341. Any narrowing of the river at that point you think would be injurious?—Decidedly.

1342. If the embankment were continued from Blackfriars Bridge to London Bridge, and if a spacious roadway were formed, in the upper part 100 feet wide, would not that create an angle at Blackfriars Bridge, and cause a deposit between Blackfriars Bridge and London Bridge in the bay that would be left?—If the embankment terminated at Blackfriars Bridge it might to a certain extent; but I do not think that any inconvenience would result from it.

1343. The action of the tide would wash out that bay?—Yes, I think so, or rather the wave of the steamboats.

1344. (*Captain Galton.*) At what point would you terminate the embankment?—At Whitefriars Dock.

1345. Above Blackfriars Bridge?—Yes.

1346. What sort of embankment do you consider would be best calculated to improve the river?—A solid embankment.

1347. Notwithstanding the objections of the bargeowners and wharfingers?—I think the trade within the limits I have mentioned, namely, from Scotland Yard to Whitefriars Dock, is not of that extent but that the coal merchants and others might be compensated at no very outrageous cost.

1348. Would you propose an embankment on the south side solid as well as on the north side?—That would allow an embankment on the south side to be made, which would afford increased wharf accommodation, where some of the trade now carried on on the north side might be taken. I should propose that the embankment, to contain the low level sewer and a roadway, should start from Scotland Yard: but as from Scotland Yard to Westminster Bridge the greater part of the frontage belongs to private individuals, it would be most desirable that an embankment should be carried out to connect with the Houses of Parliament at one end and with this embankment at the other, and that portion would be appropriated to those private individuals.

1349. You were speaking of the amount of tidal water; is your calculation made at spring tides?—At the level of Trinity high water.

1350. That is spring tide?—An average spring tide.

1351. Was your estimate of 10,000*l.* for dredging below Westminster Bridge and above and below Waterloo Bridge for the purpose of making that jagged line on the section a straight line?—No, not necessarily.

1352. Only to remove certain shoals?—Yes; there are few shoals in this part of the river; at Waterloo and near Westminster bridges are the principal shoals.

1353. You would propose to begin your embankment level with the houses of Parliament?—Yes.

1354. Do you consider an embankment expedient or not?—Yes, I think it is.

1355. On one side or both sides, would you have it?—The extent I have mentioned, mainly coinciding with Mr. Walker's line, would allow of the opportunity of the south side being embanked.

1356. It would depend upon the extent to which the northern embankment projects into the river, whether you think it expedient that the south side should be embanked?—Yes.

1357. You would commence the embankment at Westminster Bridge on a level with the Houses of Parliament?—Yes.

1358. Would you, looking to the line of the river there, propose to go to the abutment of Hungerford Bridge?—Yes, that might be done, and that is a little further out than Mr. Walker's line, but it might be done without injury.

1359. Going from that, would not it be desirable to flatten as much as possible the curve on the northern side?—No, I do not think it would be desirable.

1360. You would carry it from the first pier of Hungerford Bridge to the first arch of Waterloo Bridge?—Yes.

1361. And you think a width of 700 feet is sufficient?—No, not in that bend of the river. I mentioned 800 or 900 feet.

1362. Would not you by making it only 800 or 900 feet at that part, and only going to the first arch of Waterloo Bridge, increase the bend of the river beyond what it now is?—No, I think not.

1363. If you bring it to the abutment of Hungerford Bridge?—No, you would not increase the bend, you would make it flatter.

1364. You make a sharper curve?—It would be flatter than the existing high-water line.

1365. To what point would you carry on your southern embankment?—To the first pier of Waterloo Bridge.

1366. You prefer on the whole keeping the embankment to the first arch of Waterloo Bridge, and projecting into the river on the south side, to coming to the second arch of Waterloo Bridge and limiting the embankment on the south side?—Yes.

1367. What difference of effect do you anticipate would be produced on the river by the two embankments?—By keeping the line further back on the north side, you interfere less with the natural regime of the river, which I think is important. The extension on the south side which I propose is to no great extent, and it would interfere but very little with the condition of the river. I do not think as a principle it is desirable to extend the convex side of a bend into the river; but there I think it would be to so trifling an extent that there would be no prejudicial effect.

1368. You admit as a principle that it is undesirable to extend the convex side?—Taken by itself it is; but here you are meeting whatever effect might be produced by a solid embankment on the opposite side.

1369. Would not the embankment on the south side be an expensive affair in compensation?—It would depend upon the way in which it was carried out.

1370. You contemplate a solid embankment?—Yes, if the wharfingers were encouraged to come out to that line, and they found that there was a demand for wharf space, I do not apprehend it would cost anything. They would be only too glad to do it themselves.

1371. With reference to the effect which would be produced upon the river by the two embankments, what effect will be produced by an embankment as far as Mr. Walker's line on the north side, and what effect would be produced by an embankment to the second arch of Waterloo Bridge?—I assume that the embankment which comes to the second arch of Waterloo Bridge is intended to comprise docks.

1372. Assuming it is not intended to comprise docks?—Then I think if it were carried to that extent it would be found exceedingly inconvenient, from the strength of the current. You take the embankment into the strongest part of the current of the river by going out to that point.

1373. Do you mean that it would be inconvenient to the wharves?—Yes, it would.

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1374. I understood you to say that you thought the trade might be removed from that part of the river with no great disadvantage to the metropolis ?—Yes; but in bringing out the line of embankment to the second pier of Waterloo Bridge I assume that it is intended to preserve space to carry on the trade at the wharves.

1375. Merely as a question of trade, you consider it would be disadvantageous?—Yes.

1376. That is the only objection you would have ?—So far as the trade is concerned; but I think it would be an interference with the régime of the river, which would not be desirable.

1377. Would it alter the velocity of the current materially ?—No.

1378. Would it affect the question of scour ?—No, I do not think it would.

1379. Then in what way would it be objectionable?—It would interfere, no doubt, with the general direction of the current, and it would cause the vessels alongside of it to lie in a very exposed situation.

1380. Would not it throw the current more at right angles with the piers of Waterloo Bridge ?—I think the effect would extend as far as the strength of the current impinged upon the shore.

1381. Any effect produced by enclosing that area by removing the tidal water would be obviated by dredging above Vauxhall Bridge ?—I think so.

1382. (*Mr. Thwaites.*) Assuming Mr. Walker's line to be adopted, and the formation of a solid embankment, what would be the effect of that embankment upon the southern shore ?—It would have little or no effect upon it. Very little effect.

1383. You think the wash upon the southern shore would not affect the wharves?—No, I think not.

1384. It would not render it necessary to have a river wall on the south side ?—No.

1385. (*Captain Burstal.*) Will you point out to the Commissioners what the general set of the stream is from Westminster Bridge down past Waterloo Bridge on the ebb ?—I have taken it myself on more than one occasion. It is in this direction(*pointing it out*).

1386. It follows the deep water channel ?—Yes. I find that a float put in at the centre of Hungerford Bridge goes quite close to the first pier of Waterloo Bridge.

1387. That is the direction of the current near the time of low water, the last of the ebb, when that shoal above Waterloo Bridge is dry ?—Yes.

1388. Which is the way that the flood stream sets from Blackfriars Bridge upwards ?—That follows the line of deep water.

1389. The disposition of the stream at present is to go on the ebb tide over towards Somerset House, and on the flood towards Somerset House ?—Yes.

1390. Supposing the embankment was brought out from Somerset House, in what way would it affect the stream upon the ebb tide ?—The stream would set heavily upon it.

1391. How far out towards the middle and the south side of the river do you think that that effect would be felt ?—It would have the effect of increasing the velocity of the stream slightly towards the centre of the bridge.

1392. Would there be any sensible effect upon the Surrey shore at all ?—I do not think there would.

1393. What is the character of the material near low water mark at present on the Surrey shore below Waterloo Bridge,—I mean off Dowson's dock ?—There is a good deal of mud upon the surface, but the gravel shows itself too.

1394. Do you think that there would be any stream set upon that shore,—do you think it is possible from the position of the river to conduct the stream over to that shore so as to have a scouring power?—No, I do not think it is. You might increase the velocity a little on the north side.

1395. The general velocity would be increased, but it would be mostly increased against the embankment on the northern shore ?—Yes.

1396. Do you think the line of the embankment that you have suggested would be of sufficient width to contain the sewer and roadway?—Yes; the measure of it would be Waterloo Bridge, where there would be room for the sewer and an underground railway, and there would be ample room for a roadway.

1397. As far as dredging from Vauxhall Bridge towards Teddington goes, do you think it would sensibly affect the foundations of the bridges and wharves upon the banks of the river ?—It would affect the foundation of some of the bridges which were built before the removal of old London Bridge.

1398. It would be necessary to do something to make them secure ?—I think it would.

1399. Hammersmith Bridge ? — Hammersmith Bridge would not be affected by it.

1400. Fulham Bridge ?—It would be better if that had to be rebuilt. The foundations of Kew Bridge and Richmond Bridge might be slightly affected.

1401. (*Mr. M'Clean.*) If you expended 10,000*l.* in dredging, what depth of water would you have at low water between Westminster Bridge and London Bridge all the way along the solid embankment ?—Five feet.

1402. You said that it would cost 24,000*l.* for dredging if Mr. Bidder's line were adopted ?—Yes.

1403. That included the cost of dredging and depositing it on the spot ?—Yes.

The following statement was handed in :—

THAMES EMBANKMENT.

Statement of the cubic content in feet of water displaced by an embankment carried out to the extent known as Walker's line, and by an embankment carried out to the extent proposed by Mr. Bidder in the plan submitted to the Committee of the House of Commons on the Thames Embankment in 1860.

		Cubic feet.
Displacement by Walker's line—		
From Westminster Bridge to Hungerford Bridge		8,400,000
„ Hungerford Bridge to Waterloo Bridge		5,229,552
„ Waterloo Bridge to Blackfriars Bridge		6,492,710
„ Blackfriars Bridge to Queenhithe Dock		2,029,597
Total displacement		22,151,859
Displacement by Bidder's line—		
From Westminster Bridge to Hungerford Bridge, as above		8,400,000
„ Hungerford Bridge, as per foregoing estimate	5,229,552	
„ Hungerford Bridge to Waterloo Bridge, additional	3,465,983	8,695,535
From Waterloo Bridge, as foregoing estimate	6,492,710	
„ To Blackfriars Bridge, additional	9,476,255	15,968,965
From Blackfriars Bridge, as foregoing estimate	2,029,597	
„ to Queenhithe Dock, additional	2,285,798	
„ Queenhithe Dock to Southwark Bridge	620,460	4,935,855
Total displacement		38,000,355

The witness withdrew.

Mr. Richard Turner examined.

1404. (*Chairman.*) Will you give a general description of your plan?—As nearly as possible I comply with the terms of your advertisement in the three desiderata of, first, the sewage; secondly, the spacious thoroughfare, and thirdly, the improvement of the river. I will first refer to the street traffic. This road (*pointing to a model*) is 33 feet wide. From the existing wharf wall, and at a height of three feet above high water, that road is continued on same level throughout round the stores, and comes out on the streets. But if they chose to take the goods at once direct from the barges, they could, without coming through these stores, and set off to any part of the metropolis; that next the river is 27 feet wide, and the top road is 90 feet wide; and then on the side I overhang 5 feet in addition to aid for shops, and, as millions of people would be upon this road, they would require, from time to time, refreshments and to purchase many things; there would be a good trade at those shops. This would be a fine promenade looking over the river; and as it will become so purified, as then comparatively, it will be a beautiful pellucid stream. I propose to dredge along the outside of the embankment several feet deep, which would not cost anything to signify, because the gravel would be required in making the embankment, which is 150 feet altogether projection into the river. I propose this to be the sewer (*pointing to the model*); but at the same time that is capable of modification. It can be either nearer or deeper from the surface as may be found most useful or desirable, and a sluice from the river may be introduced to flush it at any time wished; but I thought this the best position to place it in, inasmuch as manholes might be placed so easily in the surface. I propose it to be a cast-iron cylinder of eight feet diameter at Westminster, and might be increased progressively as it comes to the city to nine feet in diameter; but that would be more for the Sewage Commissioners to settle. I took the liberty of writing on the subject, as I anticipated that it would be required much larger than I find to be necessary. I thought, so far as the present wharfingers are concerned, they would be greatly benefited by these new arrangements, and when completed it will be then seen what an immense improvement it is over the present primitive system; and therefore instead of any renumeration coming to them, it must come the other way, for every one of them would be benefited amazingly, particularly if you give them all this land, even though you retain the streets. They would have no control over the high level street; but at the same time it forms a convenient cover to them for their goods. I thought if they were to give something for it, we might possibly finish it as these plans show. At the front and rear, it is all covered with glass and ironwork, which makes a complete store of it from side to side. The lower part would be for the heavy traffic, and then the one above for teas, spices, and light goods, which require to be lofted, and they would come across and be lofted by these foot bridges. In that way they would have valuable stores. When we come to the Temple Gardens we do not interfere with them prejudicially. They behave to the public, it appears, most generously; for they invite all the community to the enjoyment of those Gardens, and we do not disturb their view, but rather make it pleasing and panoramic. This, (*pointing to another model,*) showing it, is 35 feet high from high-water mark to the top of the upper street; the pillars are 50 feet apart; and though our street runs longitudinally the inhabitants of the Temple are not harmed in the least, as it forms an interesting prospect for them, and if you gave them the four acres of ground reclaimed, that would be a great boon to them. They would do the ornamentation part themselves, and if they gave it to me to do, I would do it nicely for them. In that way they would have a capital winter garden, and the centre would suit for the drilling of their own volunteers; it would be a handsome, spacious, and noble promenade, and supposing a thunder shower cameon, all the garden visitors could go there for shelter and be very comfortable.

1405. How much do you take from the river in your general line?—I propose 150 feet from the present line of the river; but that would not be the maximum projection, because there would be some places (so as to render the curve of the river more pleasing to the eye,) where it would be perhaps 180 feet; but I begin at Westminster Bridge, where we come down at both ends by ranges of wide, handsome steps upon this fine esplanade, which is 70 feet wide and 1645 feet in length coming to and communicating with Whitehall Place, and with the new 90 feet street, where it terminates, the effect of which would be so very good.

1406. There would be no carriage way on it?—None; but if desirable that could be added. I did not know that such would be permitted. The Duke of Buccleuch and his neighbours I thought would be annnoyed if there was a street opposite their houses, and the necessity for horse traffic there did not seem to me to exist; as it is divided so much and diverted at Charing Cross in so many other directions, I thought it best to avoid introducing its continuance here; and as the esplanade would be only for pedestrians, there could be no possible objection to having it there, particularly as we would interpose a high railing in front between their terrace and the esplanade; and there would be handsome gates to each house in uniformity with the railing, and a key for each of those mansions, so that they would have the benefit of coming to the river, and they would have a good view of the river over the 70 feet esplanade, which can be less if preferred.

1407. You propose to come to Whitehall Place and there begin your road?—Yes, but only the top level street—that 90 feet wide. It would begin with a fall of 1 foot in 40, to dip from Waterloo Bridge, then gradually get under the new railway bridge, at Hungerford. The high level street terminates at Whitehall Place. In Scotland Yard, where there is a great deal of river traffic, we do not deprive them of their water; on the contrary we make it more convenient for them, and give them the facility of getting in and out freely, as I have no locks or dock gates, at this or any of the entrances for barges; I carefully avoid all complicated machinery. We do not interfere with the property of any of the docks; and again at Whitefriars and Grand Junction we leave them not only uninjured, but greatly benefited. We have four 50-feet openings, through which the barges could go in sideways.

1408. What is the width of the openings?—Fifty feet, and we have a bridge to cover the opening at once.

1409. (*Capt. Burstal.*) That would not take a 60 feet barge in sideways?—No, but we could make a 60 feet opening if it were wanted. We can make the girders strong enough to give an opening of 80 feet. The wharves would be approached in that way; the opening would be covered by the bridge, which would be a rolling once, for which we have a patent.

1410. (*Chairman.*) A bridge across those openings?—Yes.

1411. What would become of the traffic during the time?—The bridge is drawn in a moment. I have brought a model of the bridge. That would occur only here and there, where our barges must be allowed to go through, for the purpose of preserving the docks in their present integrity. Our 90 feet road commences at Blackfriars and goes all along also to Whitehall Place.

1412. Where are the people to go to when they get to Blackfriars Bridge from the westward?—I understood by the advertisement of the Commissioners that it was to end at Blackfriars Bridge. A portion

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of New Street to unite with that at Earl Street and Cannon Street will meet that perfectly. The streets along here I have lateral communication with for equestrians are at Essex Street, Adam Street, at Wellington Street, and at Bridge Street, as well as at Whitehall and Charing Cross.

1413. That is to the high level street?—Yes, but for pedestrians every street, lane, and alley we communicate with, both to the top and the bottom streets, and how much that would increase the value of all that property—the proprietors of those streets ought to contribute liberally as their estates will be made so much more valuable, and the public so much convenienced, as all will be opened up, *pro bono publico*, to such an extent by these very important improvements.

1414. Have you made any estimate?—I have gone into that with a good deal of attention and care, and being largely connected with iron, works I have proposed that nearly all should be iron, not only as the best and most lasting material, but the very best that it can be composed of for economy also; these pillars (*pointing to the model*) are three feet in diameter, filled solidly within with lias lime concrete. The under pillars are nearly 5 feet square, but at the bottom they have flanges which make them 7 feet 6 inches. This would be the passenger railway, and the other one would be a goods' railway (*pointing to the model*). I have brought a model of the railway by which I proposed to cross on the bed of the channel to France (*producing the same*). It is the same principle here. There is a double line of railway there, and as this would be at a low level under the surface, we have a lift, so as to allow people to descend or ascend by stationary engines who do not wish to go up and down by the steps. I suggest that the trains should be drawn by wire rope and pulleys, and the same engines also to work hydraulic cranes along the wharves, and the lifts up and down, inasmuch as there would be people going down every five minutes, we should, I believe, to a great extent, on this line, upset the omnibus traffic.

1415. Have you contemplated any engineering difficulties in making a railway below the level of high water?—There would not be the slightest difficulty that I can anticipate; and there is a company behind my back worth several hundred thousand pounds ready to come forward at once. I could give any guarantee that within two years you would have the whole completed. I would have three relays of workmen from end to end within the twenty-four hours. I would make the coffer-dam by the metal piles and land ties or inside piles, 16 feet from the outside front ones, and diagonally braced, united by wrought iron, and all solidly filled in between with lias lime concrete, embedding the main sewer cylinder with its proper fall to the east; all along the river would be metal face plates of great thickness, as at Victoria Docks and other places in London; and within that they would execute this work very rapidly under roofs that would be moveable and lit by gas at night, so as to work night and day the whole twenty-four hours all the year.

1416. In the meantime the trade would be stopped?—No; I would undertake that every wharfinger should find his trade was not interfered with much, as we would give every facility for conducting their business, and have their barges well provided for during the time we would be at it; we utilize every inch of ground which we reclaim. I consider that we meet all the desiderata of a spacious thoroughfare, providing for the sewerage, and improving the navigation, and as we dredge outside to a considerable depth, so as to float the barges at low water, and thus never see dry or bare banks any more.

1417. (*Mr. Thwaites.*) What is your estimate?—My estimate is 930,000*l.*, including the two railways; or it is 360,000*l.* less than that, omitting the railways; but I thought that the railways would sell for 700,000*l.*, if tenders for its purchase was advertised for that it would bring about that amount, and therefore it would be a good speculation to embark 360,000*l.*; but that includes everthing given up ready for use, the bridges and all the et-ceteras. Messrs. Houldsworth, who are very wealthy and extensive in the iron trade in Scotland, would be ready to undertake it.

1418. You consider that compensation would be included?—I do not believe that there would be one farthing to pay for compensation. I think I would undertake to say that we would conciliate every one to our plan. I have reason to suppose that compensation would be the other way, and that when the works were done, the benefit would be such that they would be entitled to pay for being improved so much. But that would be wisely left to hereafter, to be settled then and not now, and well to be so specified in the bill in Parliament.

1419. (*Chairman.*) Do you think, if the road were this height, with the enormous traffic this would have to sustain, it would remain in good order 50 years?—I believe it will remain for centuries quite perfect; like the new bridge at Westminster, and it would be constructed very much on the same principle. These pillars three feet diameter, and the trellice would be filled in with concrete, and they are of immense size at bottom; those girders are double, and then there are solid girders above them, and then wrought-iron joists with buckle plates for sustaining the ballast.

1422. (*Chairman.*) Have you had communications with the wharfingers?—Yes.

1423. Do they approve of a solid embankment?—I made this plan as I thought best to suit their requirements, and I fully believe, if so carried out, it will do so more perfectly than any other mode proposed for simplicity, stability, and utility, and for accomplishing all other purposes required by the Thames embankment, and as to the various dimensions I have suggested, they, of course, are quite easily capable of being modified either to less or more, as may be deemed advisable. But I submit that the general principles embrace all that can be wished for in the most efficient and permanent manner.

The witness then withdrew.

Mr. William Haggett examined.

Mr. W. Haggett.

1424. (*Chairman.*) Will you explain your plan to the Commissioners?—I have taken considerable interest in the drainage and other improvements in London, and have received every encouragement regarding my plans; but my engagements in the country prevented me from prosecuting them. As this necessarily included the embankment of the Thames, for improving it, and providing an excellent opportunity for the formation of a low-level sewer, I will now lay before you the particulars of my plans, as far as they relate thereto. In carrying out public improvements it is manifestly the best and most economical plan to combine as many as possible in one undertaking, and it is this principle that I would respectfully recommend for adoption on the present occasion. Another main object in such works is to avoid as much as possible any interference with private property or vested rights, or at all events to so arrange the plans as thereby to provide for the owners thereof such an equivalent as may make up for or be in excess of the value of such needful alterations as from the nature of the undertaking cannot be avoided. In my plans for embanking the Thames I have kept these points in view, and therefore although my proposal will no doubt be different from many others, I am led to hope that you will, on consideration, find it will provide the greatest efficiency and economy for the relief of the most crowded

streets, tend to the improvement of the navigation, and afford an opportunity for making the low-level sewer without disturbing Fleet Street and the Strand, according to your requirements. The following I have brought with me: a map of London, which I have coloured so as to show the proposed embankments of the Thames on the north and south sides thereof, the portions recommended to be carried out in the first instance, being from Millbank to London Bridge, to be hereafter extended as occasion may require. The embankment on the north side will be about 10,200 feet, nearly two miles; on the south, 9,300 feet, rather more than 1¾ miles. The width which I have marked to be enclosed is as follows:—

On the North Side.

	Feet.	Average Width. Feet.	Square Feet.
Millbank to Market Street	200	70 =	14,000
To Wood Street - -	600	90 =	54,000
To Houses of Parliament	400	150 =	60,000
By Front of do. to Bridge	800	50 =	40,000
To Richmond Terrace -	500	200 =	100,000
To Whitehall Stairs -	600	150 =	90,000
To Scotland Yard -	400	150 =	60,000
To Waterloo Bridge -	1,400	250 =	350,000
By Somerset House to Arundel Stairs -	800	150 =	120,000
To Temple Pier -	400	240 =	96,000
By Temple Gardens to Blackfriars - -	1,200	200 =	240,000
To London Bridge -	2,900	100 =	290,000
	10,200		1,514,000

On the South Side.

By Church Street, Lambeth, and Palace -	1,200	Use present land, &c.	
To Westminster Bridge	1,000	100 =	100,000
To Waterloo Bridge -	2,200	200 =	440,000
To Blackfriars Bridge -	2,000	160 =	320,000
To Southwark Bridge -	1,800	100 =	180,000
To London Bridge -	1,100	70 =	77,000
	9,300		1,117,000

The quantity will of course be more or less, when fairly set out, as this is only a rough estimate. It will, however, be sufficient to show the importance of the embankments. On the north there will be 1,514,000 feet, equal to 168,222 yards, about 34¾ acres; on the south there will be 1,117,000 feet, equal to 124,000 yards, about 25½ acres; being a total of 2,631,000 feet, equal to 292,333 yards, or about 60¼ acres, being such an area as in London must be of considerable value, and if properly used go far towards the expense of the work; of course if the embankment is hereafter extended it will increase the quantity. Although my plan will provide such a considerable area, it will still leave the Thames a noble river, of ample breadth, about 600 feet, with good deep waterway, and improving the navigation. It is clear that the present crowded streets of the city must be relieved, especially of the heavy traffic; and it is not sufficient to give an outlet at a few places; nothing will so effectually remedy the evil as new streets, communicating with all the present approaches. It does therefore appear very desirable to accomplish this absolutely needful object by this embankment, where alone land for the purpose can be obtained, which would amply repay for the outlay. In carrying out public improvements some one must generally be inconvenienced; but in the discharge of my duties as a Commissioner, in many enclosures I have always found that with care these differences are arranged. The inconvenience, injury, or otherwise in this case will, of course, greatly depend on the manner in which the land so reclaimed is applied. In this case there is, doubtless, much difference of opinion; but I am inclined to think that this great public work will now be carried out in a proper and substantial manner, so as to last for ages, and produce the greatest amount of good. That there is an opportunity of making good and important streets, where they are so much needed, will not admit of question; but the way to accomplish this desirable work with as little inconvenience to the owners of the adjoining properties is of much consequence, and will lead to difference of opinion, and my plan for which I will now explain. This is merely a sketch to show the use to which I would apply the land. That is the low-level (*pointing to the same*). As to the height of embankment, I should be guided pretty much by the present quays, say about 18 or 20 feet. The first division of the enclosed plan I use for the low level sewer. I contend, with reference to a sewer, especially for main drains, that it is better to keep the same away from the river. This portion of the plan represents the present property by the side of which I place the sewer. Looking at the formation of the street above, I make a provision in the same division for the gas and water pipes. My drains would therefore always be under supervision, and able to be looked to when an alteration is required, without interfering with the street above. The next portions I use for offices and stores, and then I carry the railway in the other division under the roadway and quay, partly below high water, to prevent injury to the wharf property, made quite secure by the embankment walls. That is the principle of the plan; the road being carried over either on iron girders or arched, and the road finished in the usual way.

1425. What is the width of your road?—About 100 feet, and I take 10 feet on each side for pavements. That would leave the road about 80 feet. In the sketch plans, Nos. 2, 3, and 4, it will be observed that the embankments are carried in a series of curves about 100 feet wide each side, corresponding with the course of the river, without reference to the present inequalities of the several properties abutting thereon, which arrangement will not only look well but also produce a better and more easy flow of the water, affording great facility for the passage of steam and other vessels to the quays, and preventing those obstructions which so much interfere with the navigation and tend to the formation of mud banks, which are so detrimental thereto. In the construction of these embankments it is proposed that the outside or river wall shall be built of granite or other substantial tone, the foundations being laid in such a way as I will explain, so as to effectually prevent any sinking, injury, or admission of water hereafter, and be of ample strength to resist pressure under all circumstances. The foundations of the internal division walls will be laid in a similar manner, but these will be only carried up as piers arched from one to the other, with thin partition walls where required, so as to afford facility of passage through corridors to every part, and yet by the action of the girders or arches securing the strength of the whole. The landing steps will assist the barges at the wharves. In order not to raise the roadway or street much, if any, above the present floor lines or quays, it is proposed to cover the area thus obtained with segmental arches or iron girders and joists of ample strength, between which patent or other bricks can be fixed so as to form the ceilings of the several divisions, and be finished with thin ornamental iron or other materials according to the purpose or wishes of those by whom the same may be hereafter occupied. On the top of this layer or course of bricks will be placed a coating of asphalte, or other impervious covering, so as to effectually prevent the possibility of injury from wet. Over this will be laid, the width of the roadway or street, another layer of patent hard burnt bricks, wood, or other pitching, laid alternately so as to prevent slipping and noise, and yet preserve a good firm even street or promenade. If arched, the roadway may be finished in the ordinary way, as shown in sketch No. 3. Formed with and fixed to the iron girders around the river sides of the embankments

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will be placed good bold projecting iron curb to prevent injury from the constant use thereof as a landing for vessels; and on both sides of the street will be good pavements of ample width, about 10 feet, into which at requisite distances will be framed thick glass to give light to the works below. The railway and other offices and warehouses will be lighted from ornamental openings in the centre of the street, which may also be so formed as to be used for gas or as means of access from the quay to the present wharves, through corridors, without interfering with the residue of the street or promenade, and yet be separated therefrom by iron pillars and chains, adding to the beauty of the whole. I now come to the area under the street. I propose to devote that portion nearest the present buildings to the purposes of the low level sewer (instead of interfering with the Strand or Fleet Street), which can be so constructed as to be easily examined at all times without injury to the street above, a point of considerable importance in such a work. In this division the gas and water pipes would be laid under an arrangement with the several companies, who would with this plan also have complete control over and an opportunity of preventing loss from their mains. If so desired, the pipes for pure air and ventilation (as was recommended in my original plan—I refer to the plan mentioned to the Metropolitan Board—) for the Houses of Parliament and other buildings, may also be laid in this compartment, and if carried out as proposed would be most beneficial and valuable. The next division of the area I have allotted for deposit tanks and works. That is a matter which belongs to the Metropolitan Board of Works, and I will not go into particulars. I have been led to mention it from the fact that the site for such purposes in or near London must be valuable if obliged to be purchased, and from a belief that it is better if a good plan for conversion be obtained, to intercept at different elevations or levels the immense quantity which must accumulate in such a city, so as to take advantage of the natural flow for excess of water, which by my process is effectually taken therefrom, without depriving the sewage of any of its valuable properties, as is done by some other methods; or if preferred this division can be used for stores, and the whole sewage carried to the end of the mains. The next division of space will be available for railway and other offices and warehouses, with approaches either from the adjoining houses or the quays through corridors, as before mentioned. These offices and warehouses for sale or letting will in such a situation, adjoining the railway and river, realize a considerable sum towards the expense of the work. The other division is allotted for railways, this being the only available site for the same, and will be sufficient for four lines of rails, which will also realize a considerable rental. It will hereafter be desirable to extend the same to the docks and other rails, and also to cross the river in such a way as not to interfere with the navigation to the south side so as to connect both works, and thus relieve the crowded streets and bridges, which is so much required.

1425*a*. Your plan is a continuous low level roadway about 100 feet wide?—Yes, about level with the present roadways, so as not to depreciate the value of the present wharf property.

1426. How is any commerce to go on?—It will descend from the present streets the same as it now does.

1427. I am speaking of the coal barges?—That traffic will be kept on the outside of the quay wall.

1428. This road would become a wharf?—Yes; a portion thereof at certain places.

1429. This wharf would be continuous from Scotland Yard to Blackfriars. We are to consider what would best relieve the crowded streets of the metropolis; if this road of yours is to be encumbered with large waggons as a wharf it would not be available as a road?—It is 80 feet wide, and only a portion would be so used, and may be divided therefrom.

1430. Take the footpath; the footpath would become a coal wharf?—There would be the traffic, unless the situation is changed, but the heavy goods would be taken by the railway.

1431. If you make a wharf of it, it ceases to be available as a road?—A part of my plan is to bring the wharves forward, and make the street behind, if thought desirable.

1432. If you have got this 100 feet of causeway, and along the outside edge barges are lying the whole way discharging their cargoes, it would be impossible for anybody to move along it?—Part of it would be interfered with; still this road would be approachable by every street. There would, of course, be some difficulty; but still I think with a 100 feet road there would be practically no inconvenience as the quays may be separated from the road, whilst the railway would carry the greatest amount of the heavy traffic to relieve the streets at once. As to the south side of the Thames, the formation of extensive warehouses, shops, houses, and buildings to make up for the houses destroyed for improvements in the city will be sure to follow the embankment of the Thames on the south side; and therefore it will be desirable that the same arrangements be made there as on the north side; thereby increasing the value of the property, and affording facilities for carrying out many improvements which cannot otherwise be accomplished; or, if preferred, the sewer can be first finished on both sides, and the other works follow after. Then, with reference to the surplus land not required for the works, the present frontages are so irregular that that surplus land will be considerable; and I propose that in every case the offer thereof shall be given to the owners or purchasers of the adjoining property, so that they may have the opportunity of extending their premises and bringing their fronts forward, or building additional houses in the line of the new streets according to approved plans, or it may be left open. In this way objections will be removed, considerable sums will be realized, and an opportunity afforded for arranging any difference of opinion as to compensation; and considering that all will thus gain a noble street or quay, with railway communication for taking away from or delivering goods to their stores, brought right up to their present buildings, there could not be much difficulty in arriving at a satisfactory settlement, especially as an arrangemay be made with the owners for corridors and stores under the roadway adjoining the railway where so required; and trams and cranes can be provided for shipping purposes. In this way the whole of the river frontage will be improved by shops, houses, and other buildings, which will be speedily erected thereon. I am aware of the magnitude of the work; but, considering the advantages derived, it would not be an expensive one, and the facility which it would give for the transit of coals and all kinds of merchandise direct from the ships, docks, and railways to every part, without, as at present, blocking up the streets, would certainly reconcile all parties to any dues which may be considered needful to be continued on coal till these works became self-paying. If there should be objections against the making of the embankment works exup to the present river frontages such as cannot be reconciled either by compensation, addition of lands, new streets, and other advantages, there will of course be power to purchase under the Lands Clauses Act, by which justice will be done to all; or, rather than leave it as it is at present, or not to have this important new street with approaches thereto from all others, it would even be better to carry the embankment out as proposed, and build on the sites or reclaimed wharves of equal size with proper elevations where requisite, in exchange for the present buildings, with the railway under the quay, and then make the new street run in such a direction, plant or lay out the vacant space so as to look well, and yet not to require much interference with the other properties, except

to let or sell, with the extra land, to improve and build thereon on both sides of the street with proper approaches to the railway and quays, all which would then become very valuable. In either case, with my plans there will be great facility for the low level sewer, which can be built at once pretty much in the situation marked in the sketch No. 2, for then, whether it is laid on or built in with the foundation put in for that side of the street, as there shown, or whether that is to be used hereafter as the foundation for the new warehouses and other buildings, it will be equally safe and more free from injury, as well as easier to add to when needful, than it would be adjoining the river. With regard to the temporary inconvenience from the sewage at the outfall into the river, it could be remedied whilst the works are in progress on both sides, by adopting part of what is shown in sketch No. 5, for whilst the tide is out and the wind is blowing into these open drains, which are at present depositing the sewage on the banks of the river, there must be annoyance. These openings can be fitted with moveable pipes, so placed as to deliver the sewage into deep water (even when the tide is out), where it would be carried off, and as the low level sewer is finished the pipes can be removed. Although the works recommended in my plan are considerable, they will do the least injury to the adjoining property, secure the valuable area thus obtained, amounting after they are completed to about 19,790,900 cubic feet, to be profitably applied, instead of being filled up as a solid embankment, and yet the combination thereof in one undertaking will enable the whole to be carried out at moderate cost, for the following reasons: First, as regards the low level sewer, which if carried through the Strand and Fleet Street would have been a very expensive work—which sum will of course go towards the present undertaking. Second, as regards the manure work, these would have to be provided for elsewhere at considerable expense, which must be applied to the present works, or if the space allotted thereto is not so used, but let for stores, a good rental will be realized therefrom. Third, with reference to the offices and warehouses, with approaches through corridors from the adjoining railways and quays, must be valuable, and a return for a considerable portion of the expense will be received for the same. Fourth, as to the railways, when we consider the immense sums paid for sites for railways in London, it will be readily understood that a large proportion of the expense may be apportioned on this division, nearly the only available site for such undertaking, connected as they will be with the docks shipping, &c. Fifth, the gas and water companies will have their proportion to pay for facilities in laying their mains and pipes for the new streets. It is the spreading over the expense on these several works that will make the outlay on each moderate, especially when it is taken into consideration that the sites will be obtained free of cost; whilst the residue not used for these works, or in arranging with the adjoining proprietors, may be sold for building purposes. To estimate the expense of this undertaking with accuracy, will probably not be required till a future day, for it would involve an examination of the site as to the nature of the foundations, the depth of the soil to be removed to give the required height without interfering much with present properties, and the accurate width of the reclaimed land in every part, (which would affect the stores and offices but not the railways), and other particulars; for it is clear that any amounts stated for such works without investigation, would be liable to mislead. Of the importance of the work there cannot be a doubt; and whatever may be the cost, it will be fairly met by the income which will result therefrom, and be the means of providing with the greatest efficiency and economy for the relief of the most crowded streets, without incurring the enormous cost of making new streets in other situations, and to the improvement of the navigation, and afford an excellent opportunity for finishing at once the low level sewer without disturbing Fleet Street and the Strand. That is to say, if the site be fixed with reference to the low level sewer, it may be carried out supposing the embankment to be done afterwards.

Mr. W. Haggett.

14 May 1861.

1433. (*Mr. Hunt.*) It is not necessary for you to make an estimate, because you say that the return would be more than adequate for any outlay?—If I were to make an estimate, I believe it would be a great inducement to the adoption of the plan. The object is to endeavour to make the matter self-paying by using the land profitably.

The witness withdrew.

Adjourned to to-morrow at 12 o'clock.

Wednesday, 15th May 1861.

PRESENT:

The Right Hon. The Lord Mayor.
Major-Gen. Sir Joshua Jebb, K.C.B.
Captain D. Galton, R.E.
Captain Burstal, R.N.
John Robinson M'Clean, Esq.

The Right Hon. The Lord Mayor in the Chair.

Mr. F. Cayley Worsley examined.

Mr. F. C. Worsley.

15 May 1861.

1434. (*Chairman.*) Are you a civil engineer?—I was for some time with Mr. Goldsworthy Gurney, but I live in the country now and do not practice as an engineer. My attention was drawn to this question by having sat on a committee for utilizing the sewerage of London, and I published this plan some years ago. Seeing your advertisement, I thought that I would give the Commissioners my views on the question. Perhaps my plan departs a little from your instructions, inasmuch as I go on both sides of the water, and contemplate making London beautiful as well as taking into consideration the commercial question; and I do not think that I interfere with the commercial question. The beauty and health and the general enjoyment of London is a great consideration; and though the commercial question is also a great consideration, I think that the two ought to be balanced, rather than that exclusive attention should be paid to the one. With that view I drew the plan; and to arrive at the beautiful and the healthy it appeared to me that the tidal water, so far from being a benefit, was an absolute objection, and I contemplate stopping the whole of the tidal water by flood-gates at London Bridge. Stopping the tidal water at London Bridge would not stop the traffic of the river, because at high tide the gates would be open at that time. The water being the same level on both sides, the craft could be admitted into the upper river, which would then be a deep and nearly stationary water, admirably adapted to steam navigation. You would have, by the plan I have suggested, the same mean area of water as you have now, at high tide it being a large river, and at low tide a small one. I construct the parapet wall at the halfway, so that you would literally have the same mean extent of water as you now have. With that arrangement I get sufficient space on the sides of the river to construct the required sewer for carry-

Mr. F. C. Worsley.

15 May 1861.

ing off all the sewage which is not to be taken by the system of sewerage now constructing, and I get space for a tram-road which will command the existing business premises from one end of London to the other. I get a space for a line of architectural houses, and for a boulevard, which would be capable of growing luxuriant trees. By removing the mud-banks within the wall, as a future ground for the trees, you would at once clean the river and make it a pure bottom; and by the exclusion of the tidal water, and by the admission solely of the country water, the whole river from London Bridge to Richmond would be more like Ulleswater than the estuary which it now is. The footway and public drive would be approached by a slight incline from the existing ground over the tramway which runs between the new buildings and the existing buildings would consequently not interfere at all with people who wished to enjoy the walk or drive belonging to those houses. And from having the river always at high-water mark, the culvert which runs from one end of London to the other is capable of being flushed at any moment at low tide, or during the fall of the tide into the river below London Bridge. It appears to me that, so far from being a disadvantage to the traffic communication, the advantage of permanent deep and nearly stationary water would give such immense facility to steam tonnage of all kinds that the barges which would be admitted at high tide could, with the greatest possible economy, be taken to their respective destinations with far more economy than they can now in the tidal flow, which requires a great period of waiting under all circumstances. It also appears that the purity of the water which you would have above London Bridge would give the Londoners not only a beautiful lake to live upon, but great facility of distributing pure water without those enormous expensive works which are constructed for bringing the water from a distance; and the tramroad which runs behind, which would connect with the wharves below London Bridge, would, I think, ultimately take the bulk of the traffic, instead of its going by the barges at all, for in the one case they would have two movements—first, from the collier to the barge, and then from the barge to the wharf, from whence it would be afterwards distributed by waggon; whereas if it were at once unloaded from the Newcastle colliers it would come along the tram-line and would supply London as cheap or cheaper than the present barge communication. In the drawing before you, the draughtsman, contrary to my directions, has made the plan without allowing the public walk to go underneath the bridge. The public walk, according to my view, would be continuous from one end of London to the other on both sides, and so would the sewer, which would shoot the water out into the pool at low tide. That sewer would be capable of being flushed at any time from the level of the upper river, and if mud accumulated in either the upper or the lower river the opening of the floodgates would facilitate the scouring of both. There is no engineering difficulty in building floodgates which would open and shut at London Bridge. The only question would be to make a good bottom before the gates were placed there; after that you would have pure water at a permanent even level. You would have the whole of the mud removed, and have a permanently clean river, well adapted for all steamer and boat purposes, and a source of beauty and comfort to the inhabitants of London. I base my plan on those considerations. In this paper my plan is described, perhaps, more succinctly than I could state it.

The same was handed in and read as follows:—

"In the first place I would construct an iron or brick culvert, sufficiently large to take all the sewage below the present drainage works, and I would extend the culvert on each side of the Thames to the distance required by dense population upwards, and to London Bridge downwards. I would then construct a parapet wall, at about half-tide water, which would take in the greater part of the mud banks; the remainder I would remove to fill up the embankment within the parapet wall. I would then construct floodgates at London Bridge to keep the river at high-tide level, and to exclude all dirt and tidal water from below. This arrangement would give 70 or 80 yards for a public walk and drive and for a line of architectural houses, with tramway immediately behind them, this tramway to be immediately over the large culvert. By this arrangement the average width of the river would be the same as it is at present, and from the water being nearly stationary at all times, and of equal depth, it would be greatly improved for steam navigation; and from the level of the upper river being always at high water, the side culverts could be flushed at low tide without trouble or expense. The floodgates at London Bridge could be opened every day at high tide to let the small crafts into the upper river, which could then be towed to their destination by steam tugs at less cost than waiting for the run of the tide, and the water on both sides of the floodgates being at that time on the same level, there would be no tendency for the dirt or tidal water to flow into the upper level. An escape for the country flood water could be easily arranged for in the construction of the floodgates. By the above plan all dirt would be absolutely excluded from the upper river, for the side conduits would be discharged into the tidal water below London Bridge, the mud banks would be at once removed and provide a rich base for the roots of trees on the public walk. London would consequently be improved in health and beauty to the greatest possible extent, and the ground reclaimed from the river would, to a great extent, if not entirely, repay the expense of the work. The continuous wharf or parapet wall being always in deep water would give every facility for landing goods, people, &c.; and by constructing small tramways across the public walk to conveniently placed archways in the new buildings, the business premises behind would have every convenience, far more, indeed, than they now enjoy. The traffic question on the present tidal river is perhaps the most difficult point connected with this plan, but I must contend that the advantage of permanent deep and nearly stationary water more than counterbalances the loss of the tidal run, and that the effect of a continuous pure water lake from London Bridge to Richmond, skirted by architectural buildings, luxuriant trees, public boulevards, and drive, together with the luxury of bathing, boating, skating, &c. (open to the whole population of London), would far more than counterbalance all minor considerations."

1435. Is your parapet to be the wall of the embankment?—Yes; it is all drawn on that plan; the wall of the embankment is called a parapet or wharf wall.

1436. You spoke of it as being at the level of half-high water?—Yes, the base of the wall to be at an average medium between high and low water; the top of the wall consequently would be a little above high water. The water being permanently high, it could stand within two or three feet of the top of the wall.

1437. So that you would only have your floodgates to open at high-water; how would you provide for the steamboat traffic between Hungerford Bridge and Woolwich?—You would not allow the small up-river boats to go into the low river at all, but the larger boats would remain in the lower river, and the passengers would step across the distance from the one to the other.

1438. You would suppress those watermen boats which run every quarter of an hour from Hungerford Bridge to Woolwich?—No; you would have one boat running below, and one above London Bridge, and the passengers would walk from one to the other some 20 yards, or they might pass directly over the floodgate by steps into the lower boat.

1439. You are reckoning upon having clear pellucid water, because the tidal water would not bring up any mud from the sea; but what is to be done with the mud which the river brings down from above?—When the mud accumulated, which in process of years it might, it would be removed at once by throwing open the gates when there was a certain head of water in the upper river. The body of the water being put in motion would remove any soft mud which had accumulated, but on the great warpages on the Humber the mud from the estuary is the only mud which they can collect in any quantity; the mud from the upper country appears to be comparatively nothing; it is the mass of mud which time has accumulated in the estuary, working backwards and forwards, that forms the deposits.

1440. Your sewers are to empty themselves into the river below London Bridge?—This sewer which is now contemplated will not require to be the size at first supposed to be necessary, for a very diminished quantity of sewage will be required to be taken down when the new works are completed; I suppose not one tenth; and if necessary this could be lifted into the upper lead; but so comparatively small a quantity would have little effect on the tidal water below London Bridge.

1441. Your plan as regards the sewer does not meet the requirements of our Commission, that we should provide for the low level sewer?—That I can easily conceive, for my plan was drawn prior to hearing your conditions; but if that sewer was continued, I suspect that they must all come to the same level at last. If pumping is to be the process by which they raise the sewage, it can be as easily raised out of that as out of any other sewer. The sewage of London must come to a lower level—there must be a lower sewer—that must be either pumped or lifted into the upper level, or discharged into the river.

1442. It does not appear that your sewer will be at a level low enough to receive the other sewers?—Yes, they all come into the river at the half-tide level, but the sewer could be provided for as required; it would be merely sinking the sewer a few feet more or less.

1443. You have made no plan of the river showing what line you take?—No; because I say that the embankment should run as near as possible at half tide, which gives itself a line in the river by the tidal flow.

1444. (*Captain Galton.*) Have you considered the effect which this dam would have upon the lower part of the river?—It would check the tidal run considerably.

1445. What would be the effect of that upon the lower part; say just below London Bridge?—Instead of coming 2 miles an hour or 2½ miles an hour, the water would simply rise to about the same elevation that it now reaches.

1446. Would there not be an injury to the channel, to some extent, by the accumulation of deposit?—If a deposit did accumulate, the upper water would always discharge it, because you have a head of water 10 miles long.

1447. Would not discharging that mass of water through the pool be inconvenient to shipping?—Not if it were done gradually, by means of sluices.

1448. Must not you either produce a greater velocity than at present on certain occasions, or else allow it to flow backwards and forwards as it does now?—I should surmise that, like the harbour of Dover, if you brought down a head of water at any time when the water was low in the pool, you could let it through the gates at any velocity you pleased; you let down what you want and no more than you want. No doubt it would stop the flow of the tide, but having the large estuary without that amount of current would improve the steam navigation instead of injuring it, for all the best craft is now towed by tugs, and it is found economy to do so; if they had nearly stationary water to run in that would be rather an advantage than a disadvantage.

1449. (*Captain Burstal.*) You think that the tidal wave would arrive at the same height as it does now at high water?—It would be very nearly the same height. At Liverpool it is found that the alteration in the under water is very little in height.

1450. You put a dam across the river at London Bridge, and therefore you effectually stop all current. It does not follow from that that you should stop the tide wave rising?—You would, in this way; that water rises according to its perpendicular altitude.

1451. Supposing that the water is stopped by this dam from going upwards on the flood tide (not speaking of the tidal wave, but of the stream), how could any vessels which at present navigate the pool from the docks and so on, and which are entirely dependent upon the current to take them from the docks to the different wharves and tiers, navigate the stream?—They would be warped from place to place as is done in all the harbours of England, and the water being nearly stationary would prevent accidents.

1452. Knowing the quantity of mud and other matter which is held in suspension in the river below London Bridge, there being no stream either on ebb or flood, there must necessarily be a very large deposit of mud taking place at all points below London Bridge for several miles?—I conceive that the mud now floating backwards and forwards in the Thames accumulates on the banks in quiet weather, and is again disturbed by rough water; what is held in suspension in the water would be at any moment, as far as my view goes, capable of being sent down, by sending down part of the head of water above the tidal locks, because that head of water represents a very much larger basin than exists in any of the ports of England—for instance, at Dover—where back water is kept up to clear the harbour from time to time; you have exactly the same conditions here, only with ten times the power. You have all the power which the water from here to Richmond would give you, instead of a few acres, and therefore a few inches lowering of that level would command the entire scour near London.

1453. How far below London Bridge would the river come to its normal state, as far as stream goes?—No doubt it would be diminishing from London Bridge to the sea in the ratio the upper river bears to the estuary below, but then it would be admirably adapted for steam purposes.

1454. Supposing the outfall of the main sewage is taken to Barking Creek, do you think that the contents of that sewer, and all the rest of the matter held in suspension, would be carried seaward as fast as they are now?—Exactly the same, I conceive; because the average flow from the city would be what it is, only always going down, instead of oscillating backwards and forwards. The upper river would have a continuous course downwards. Whatever you had below would be identical with what it is now, only instead of moving quickly backwards and forwards, it would be gradually moving towards the sea.

1455. The barges would require a series of tugs?—Yes; but one tug with stationary water would run with 50 barges two miles an hour; therefore the cost would be rather a gain than a loss, and there would be none of the breakages consequent upon a rush of water; everything would be quiet and calm, and when the vessels came alongside the wharf they would have quiet water to lie in.

1456. (*Mr. M'Clean.*) Is the shipping now below London Bridge very much crowded?—Yes.

1457. Where would the barges lie when they were waiting for the tide?—In the mid current close to London Bridge.

1458. Would not they interfere much with vessels passing there?—I do not know the average number of barges that come through London Bridge in the course of the day, but at this moment there is a large space always clear of vessels immediately below London Bridge in mid-pool, and, inasmuch as the tidal water only occurs once a day, if they were there in readiness any number could be brought through at once.

Mr. F. C. Worsley.

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1459. (*Captain Burstal.*) When you sluiced through those gates, would not the current at that starting-point below the sluice be so violent as to break those barges adrift?—It would only take place at low water when barges were not coming up the stream, and probably would not be required more than once or twice a year.

1460. What is the use of sluicing at low water, when there is no ebb stream to carry the detritus outwards?—The mud would be at the bottom, and would be carried out by a discharge of upper water.

1461. Would not the next flood bring the mud back?—The next flood would have no action to bring it back; the water would simply rise.

The witness withdrew.

Mr. T. Thompson.

The following paper sent by Mr. Thomas Thompson was read:—

"Embankment of the North Shore of the River Thames.

The retaining wall to follow the line proposed by me, and as shown on the accompanying plan, to be three feet above high-water mark (spring tide), to be faced with Portland or other suitable stone, and between Westminster Bridge and the eastern end of the Temple Gardens to be surmounted by a stone parapet three feet high.

I propose to divide the embankment, and also the roadway, into two parts. The first portion of the embankment to commence at Westminster and terminate at Queenhithe Dock; the second thence to London Bridge.

The first portion of the roadway to commence at Westminster and leave the river on the approach to Paul's Wharf, in the direction of New Earl Street, Cannon Street, as shown on the plan, and coloured yellow; the second, the continuation to London Bridge, and coloured red.

The roadway within the retaining wall to commence at Westminster to run a dead level to the eastern end of the Temple Gardens, passing under Hungerford and Waterloo Bridges; from the Temple Gardens gradually to rise on iron columns to a level with the roadway of the proposed new bridge at Blackfriars; to continue on that level, and to leave the river shortly before reaching Paul's Wharf; to cross Upper Thames Street on an arch or girders, so as not to interfere with the heavy and slow traffic of that thoroughfare, and to proceed in the direction of New Earl Street, Cannon Street, as shown on the plan.

This, the first portion of the new road, would give the most direct line between Westminster and the heart of the City.

This roadway to consist of, as proposed, a promenade at least 20 feet wide, a carriageway of 70, and a pavement of 12 feet. At the bend on leaving the embankment, to be reduced to about 70 feet, pavements and carriageway.

Steamboat piers to be allowed and provided for at suitable places; to be sufficiently ornamental not to destroy the effect of the embankment.

To be no wharves between Westminster and the Temple. Lower down the river, the embankment under the raised roadway would either serve the purposes of the wharves, or suitable openings or docks could be made where required.

The distances on the proposed new shore line would be,—

	Feet.
Westminster Bridge to eastern end of Temple Gardens - -	5,750
Thence to railway bridge, Blackfriars - - - -	1,000
Thence to Queenhithe Dock -	1,800
Total feet - -	8,550

which would be the length of the first portion of the embankment.

"The cost of the retaining walls from Westminster to Queenhithe Dock; of the parapet between Westminster and the eastern end of Temple Gardens; of forming the roads and pavement to the same, and the whole of the filling in as far as Queenhithe; of continuing the various streets from Parliament Street, Whitehall, and the Strand (as far as Middle Temple Lane) to the new road, and of paving them;—the cost of the whole of these works would not exceed 180,000*l.*

The cost of the roadway on leaving the Temple Gardens I have not got.

The average of ground recovered from the river, independent of the road, between Westminster and the eastern end of the Temple Gardens, would be about 25 acres.

Should a similar plan to this be adopted, and the wharves between Westminster and the Temple be done away with, the continuation of the streets from Parliament Street, Whitehall, and the Strand to the new road would give a building frontage of fully 9,000 feet, which, calculated at the moderate average ground-rent for such sites of 20*s.* per foot, would represent a capital of 230,000*l.* to 250,000*l.* To this must be added the value of the cross streets that could be formed, the frontage facing the river that could be made available, and such amounts as may be received from the owners of adjacent property for the portions of ground recovered from the river between their premises and the new road.

To the value of this ground, and the effect the new road (which would no sooner be opened than it would become a most frequented thoroughfare and promenade), would have in enhancing the value of the adjacent properties, I particularly wish to call the attention of the Commissioners. Here alone is sufficient value to pay the cost of the works I have estimated above, and a large surplus for compensation where damage is sustained, and to carry out further works.

In forming the line of shore for the north side of the river, I have of necessity had to take in account the southern shore, which, should it ever be embanked, ought to follow the line marked on my plan.

At Waterloo Bridge I have taken the line at 20 feet outside the first pier on both sides of the river.

The continuation of the embankment from Queenhithe to London Bridge, and of the roadway over it from Paul's Wharf, as coloured red, would interfere with so much property and so many interests that I have been unable to calculate its cost. The first portion of my plan is complete in itself, and the second, which would be very costly, might be an after consideration.

"Tho. Thompson.

"London, 13th May 1861."

Mr. W. T. Matier.

The following paper from Mr. W. T. Matier was read:—

"Thames Embankment.

It is proposed to form an embankment on the north side of the river Thames, 120 feet wide, extending from Westminster Bridge to London Bridge. The river side of this embankment is to coincide with the red line drawn on accompanying map, except at the bridges, where it is to join the abutment in a line with its impost.

On the land side of embankment there is to be a footpath 20 feet wide, flagged and kerbed; next this a carriageway 65 feet wide. On the river side of this carriageway a railway, consisting of one line of rails, the upper surface of which is to be 3 feet 8 inches below the surface of the carriageway at same place, 12 feet 6 inches wide, except for a short distance at the termini, where a double line and a turntable will be required. The carriageway will be on a level with the floor of the railway carriages, and separated from the railway by a strong iron railing 3 feet 4 inches high. Along the river is to be a wharf or quay 20 feet wide, protected by an iron

W. T. Matier.

railing on the land side, and metal posts and chains on the river side. The surface of this wharf is to be 12 feet above the surface of rails of railway, and to have metal bridges for carriage of goods across the railway to waggons on carriageway.

The surface of this wharf is to be 16·0 ordnance level, viz. 34 feet below the level of Wellington Street, and 34·7 below surface of roadway centre of Southwark Bridge. At this level the railway will pass through a tunnel formed in the abutments of the various bridges lying between its termini.

By this plan about one fifth of the whole material required to form the embankment will be saved. Provision is made for a large traffic on foot, in vehicles, and by railway, and also for the landing and easy removal of goods. As the wharf will be only partially and occasionally used as such, it will, when nothing but pure water flows in the river, form a healthful and agreeable promenade, access being had to it by metal foot bridges over the railway.

Provision is also made for the "low level sewers" being carried along the embankment in the position indicated on section.

In the event of the railway being omitted, the 15 feet occupied by it can be added to the carriageway, which will then be 80 feet wide, admitting of a tramway.

Wm. T. Matier.

Belfast, March 26, 1861."

Mr. L. Gisborne.

Mr. Lionel Gisborne's plan was handed in, and the following letter accompanying it was read:—

" 6 Duke Street, Adelphi,
14th May, 1861.

" Gentlemen,

I am instructed by Mr. Forde, partner of the late Mr. Lionel Gisborne, to submit to you the accompanying plans for embanking the Thames, expressing at the same time Mr. Forde's regret that his absence from England on business prevents him from explaining them personally, especially as it was contemplated to modify them to a certain extent to make them correspond with the different important works now being carried out and projected in the vicinity of the Thames.

It was in 1852 that the late Mr. Lionel Gisborne first conceived this project, and commenced his plans, which, together with estimates, he submitted to Viscount Palmerston (then Home Secretary) and Sir W. Molesworth (First Commissioner of Works) in 1853. (Two of the accompanying plans and designs bear that date.)

Mr. Gisborne suggested that a low level sewer should be constructed in the embankment, and issued a printed statement, which has since been embodied in a pamphlet, of which a copy is submitted to you.

Towards the close of the year (1853) the plans were lodged, standing orders complied with, and application made for a Private Bill, intituled,—

' A Bill for embanking and improving the River
' Thames between Lambeth Palace and London
' Bridge, and for constructing certain Sewers,
' Quays, and other Works on the Lands to be
' reclaimed thereby.'

Mr. Gisborne proposed in the above to carry out the works by means of commissioners named therein.

This Bill was read a first time during the session of 1854, but was voluntarily withdrawn on its second reading on account of the commencement of hostilities with Russia.

In 1856 Mr. Gisborne submitted the plan to the Metropolitan Board of Works, and in 1858 to the First Commissioner of Works, and in 1860 he gave evidence before the Select Committee of the House of Commons on Thames Embankment.

The accompanying plans, &c., are those referred to above, viz.,

No. (5) 1853. Original plans and sections as lodged in Parliament.

(2) 1853. Elevations and sections of original designs.

(3) 1856. General plan. Elevations and longitudinal sections. Cross sections.

(1) 1858. Plan showing road and tidal basins only.

(3) 1858 & 1860. Plans laid before Committee of House of Commons, 1860. Cross section.

(1) 1853 & 1857. Pamphlet.

I have, &c.,
(for C. H. Forde),
(signed) Chas. L. Lewall.

The Royal Commission,
Thames Embankment."

Mr. L. Gisborne.

15 May 1861.

The following particulars of the plan were read:—

" The plan is as follows, viz., to confine the waterway of the river to a width of 700 feet (the width already sanctioned by Parliament for the new bridge at Westminster) by means of quay walls to be built on both shores, each laid out with reference to the best direction for the uninterrupted flow of the water, at the same time being suited to those bridges at present spanning the river, and which are likely to remain for years to come.

The present wharves are to be accommodated with floating basins from 300 to 100 feet wide, and will be provided with entrances at suitable distances, to remain open from three to four hours each tide, so as to admit of the ingress and egress of barges.

On the ground acquired by filling in to the height of four feet above high-water mark between the river wall and floating basins the following works are to be executed—

Middlesex Shore.

The quay wall on this side of the river is to extend from Westminster Bridge to London Bridge, and is to be twenty-one feet over Trinity high water, thus avoiding the necessity of drawbridges over the entrances to the tidal basins. At that level, and as far as St. Paul's Wharf, where a new bridge is in contemplation by the corporation, it is proposed to have a covered esplanade for foot passengers next the river, twenty feet in width, alongside of which the ground, for fifty feet back, will be let for building, except at those points where buildings would be objectionable, as opposite Whitehall Gardens, Somerset House, the Temple, &c. Parallel with the esplanade, and extending from Hungerford Bridge to London Bridge, a railway will be constructed at a very trifling additional expense.

Next the railway is to be a street from ninety to forty feet wide, extending from Westminster to the proposed bridge at St. Paul's, and passing under each of the bridges, with approaches leading to them and the main thoroughfares.

The remaining portion of the embankment, having an average width of about sixty-five feet, will be let for building ground suitable for large stores, one side of which will face the new street, and the opposite side the floating basin.

In addition to the foregoing, large ground wharfs are to be constructed under the esplanade, railway, and road, which will connect the river with the warehouses next the floating basin, and by that means greatly facilitate the unloading of barges at any time of the tide.

Opposite Whitehall, the Temple Gardens, &c., as well as from St. Paul's Bridge to London Bridge, the quay wall is only to be built four feet above Trinity high water; and the esplanade, railway, &c. are to be carried on columns, not less than 25 feet apart, so as not to shut out the present view of the river, or to interfere with the existing wharfs between the proposed bridge near St. Paul's and London Bridge. For this distance an additional width of about 40 feet will be added to the present wharfs.

Mr. L. Gisborne.

15 May 1861.

Surrey Side.

The quay wall on this side of the river is to extend from Lambeth Palace to London Bridge, and for the greater part of this distance it will be about 21 feet above Trinity high water.

The existing wharfs are to be accommodated in a similar manner to those on the Middlesex side, and the ground acquired by the improvements is to be laid out as follows:—Next the river, a road 70 feet wide, alongside which the ground is to be let for building purposes, where large warehouses and shops can be built according to approved designs.

At each of the bridges it is contemplated to divide the road in two, half forming an approach to the bridge, the other half accommodating the through traffic, and therefore passing underneath.

Ground wharfs similar to those before described, and for similar purposes, are to be constructed under the road.

The cost of the works necessary to complete these improvements has been carefully gone into in detail; and allowing more than ordinary prices, the total amount, including every contingency, is under 2,000,000*l.*

The annual ground-rents of shops, warehouses, wharfs, &c., with the receipts derived from the railway, will, on a moderate calculation, amount to 103,000*l.*"

Capt. J. Vetch, R.E., F.R.S.

Captain James Vetch, R.E., F.R.S., examined.

1462. (*Chairman.*) You are the engineer for the conservancy of the tidal waters of the United Kingdom?—I am.

1463. You have brought us the plan which you prepared for the Admiralty in March 1853?—Yes, and nearly similar to what I proposed to the Commissioners of Sewers, (of which Commission) I was a member in 1850.

1464. Will you proceed to describe it?—I do not think that I can add much to the evidence which I gave in June 1860 before the Committee of the House of Commons on the Thames Embankment. I may explain the reasons which guided me in laying out my plan. The line I proposed, at and near Hungerford Bridge, on the north side of the river, was for the object of diminishing the very great concavity or turn of the river there, and at the same time to reduce the width to what might be deemed a medium breadth, so that the tidal currents passing up and down should not spread out and become less effective in scouring power or at one site than another, so far as practicable; and that the action of the tides up and down should be placed in a state of greater harmony and scouring power; that there should not be at one place a strong current, and at another place a weak current by undue expansions and contractions of the river; where the stream is confined within narrow limits, the deficiency in width would be compensated for in depth by well regulated banks; the consequence of a narrow channel is, that a considerably greater depth of scour takes place there, than anywhere else. My object would therefore be to reduce the banks as far as practicable to such relations with the river bed as should ensure an equality of current. As the current of the ebb and flood act stronger upon the concave side of the river by centrifugal action, it is desirable to maintain them so in order to ensure greater scour and greater depth, which has pointed out the improvement of the river bank or wall on the north shore of the river at Hungerford, and for some distance above and below that site. I am of opinion that unless very strict attention is paid to those essential principles, in a public point of view, the river Thames would not receive that improvement in its course, and depth of its channels which it might otherwise attain. It is well known that wherever there is a great width of the tidal bed there is also considerable shoaling; these shoals occur either on the one side or the other, when convex, or in the middle, as at Woolwich, and elsewhere, in strait reaches, which to avoid I proposed the line of embankment on the north side of the river at Hungerford, and above and below it. I have here a statement showing the widths of the river at the several bridges at present, and the width I propose them reduced to, from which it appears that London Bridge, from bank to bank, is 800 feet, the proposed width would be also 800 feet. Southwark Bridge is now 700 feet, and must remain so. Blackfriars Bridge would be 875 feet. Waterloo Bridge 938 feet. Hungerford Bridge 938 feet, and Westminster Bridge 938 feet. I find that this year there has been before Parliament a proposition to construct a bridge to Lambeth, upon which the Admiralty have reported, and they have required that between the two abutments the width should be 894 feet. There are very few piers in the last-named bridge, and there would be a total free passage of 870 feet. If that bridge be constructed it would be another good reason for preserving a uniform width of the river: viz., 894 feet.

The witness handed in the following paper:—

—	Distance apart in Feet.	Present width in Feet.	Proposed width in Feet.	Clear Waterway.
London Bridge, from Bank to Bank	—	800	800	—
Southwark ditto ditto	1,500	700	700	—
Blackfriars ditto ditto	2,360	990	875	—
Waterloo ditto ditto	2,880	1,235	938	—
Hungerford ditto ditto	1,150	1,340	938	—
Westminster ditto ditto	2,000	938	938	876
Lambeth ditto (proposed)	2,200	894	—	870

1465. At Waterloo Bridge you reduce the width nearly 300 feet, and at Hungerford Bridge rather more than 400 feet?—Yes; the depth of the water and the navigation of the Thames depend most materially upon the manner in which the streams of flood and ebb get most freely up and down. If there are contractions here and expansions in other places they must create great disturbances and tend to diminish the flow of the tide, and of course the depth of the bed of the river, so desirable to be maintained for navigation and sanatory objects.

1466. You would greatly diminish the water-holding capacity of the Thames between London Bridge and Westminster Bridge?—To something like a medium width, so that the action should be nearly equal. If it became a lake at Hungerford Bridge the consequence would be that the flood tide would fill the whole of the lake; but when filling that lake, the current which ought to be running up the river bed would be applied to the raising the level of the lake, and when that was filled it would then run up, causing the loss of time and scouring action of the tide, and unless something like a uniform breadth and depth are retained, free action will not be given to the scour of the tides.

1467. (*Captain Burstal.*) You mean to give us to understand that if the river was contracted by line of embankment at Somerset House and Hungerford Bridge, the stream would run quicker up and cause high water to be earlier in the upper part of the river?—Yes; the strength of the current is now materially diminished by the expansion and contractions.

1468. (*Chairman.*) Supposing that you were to make a very large lake there, to follow up your own illustration, and supposing that, at the same time, you made another large lake anywhere within the tidal range, would not both those lakes fill at every tide?—The lakes would be filled, but that action would prevent the same quantity of water going up to Richmond and Teddington with the same momentum.

1469. Would not any amount of water-holding capacity anywhere within the tidal range be occupied at every tide?—I think not. If the flood tide were applied to occupy a lake lower down the river, so much water would be abstracted, or prevented filling the upper reaches of the river, and in scouring the channels to the same amount.

1470. Is it not simply a question of level, that the tide coming in from the sea will always rise to the same level, be the breadth of the water whatever it may; whether it is a hundred feet or a thousand yards in width, would not every tide rise to the same level?—I think not; because if two lakes have to be filled to the same height, the same quantity of water could not also run up to Teddington Wear. Wexford Harbour is a strong case in point. The mouth of the harbour is narrow, it then enlarges into a sea lake, and the consequence is that the water does not rise at Wexford Quay so high by two feet as at Wexford Bar, so also at Montrose and elsewhere.

1471. As water finds its own level, if you make a large lake for the river to fill, the current up the river before it reaches the lake would be so much the more rapid, the water will hasten to rise to a level to fill up the vacancy, will it not? If the reare vacancies in the river, will you not get such an increase of the quantity of water as will supply those vacancies by the mere increase of the rapidity of the current?—We have many instances in this country where in funnel-mouth beds, the upper part of the river at high water reaches a greater height than down at the mouth of the river itself, and there are other rivers where the water passing in never gains at the further extremity the same level as it does at the mouth.

1472. I suppose you have made no calculation of the quantity of water-holding capacity which you would displace by your embankment?—I do not think it so much depends upon that, as checking the momentum already acquired.

1473. You have not ascertained the cubical contents of the embankment that you propose on your plan?—No; it is very obvious that if the river remains very wide at one place it will take a considerable longer time to fill that particular portion of the river and the momentum will be impaired.

1474. (*Capt. Burstal.*) It would more affect the time than the height?—Both.

1475. (*Chairman.*) You occupy by your embankment in solid earth that which the water now occupies to the extent of 34,000,000 of cubic feet; at high water there would be 34,000,000 cubic feet less to come up, and at the ebb there would be 34,000,000 cubic feet less to go down?—I am not of that opinion. I think that instead of limiting the velocity, it would be much greater than if the whole expanse at Hungerford remained as at present.

1476. You do not mean that the top of high water would be at a higher level in that diminished part than it is now?—I am of that opinion, and in many other rivers the tide is at a greater height at some given point or other, depending upon local circumstances, than at the extreme head of the tide.

1477. (*Sir Joshua Jebb.*) You stated that where the velocity of the current was changed there would be shoals formed, some in the centre of the river. What is the particular action of the water which causes those shoals?—Those shoals it appears to me are caused in this way. If the tide runs through a very large expansion of river bed, it cannot form a deep channel through the whole of that expansion, and in those portions which are unnecessarily wide shoals would be formed.

1478. Would the contraction of the river to a uniform width tend to create shoals, do you think?—If the river is contracted to a medium width with a gentle taper, I think that there would be no deposits; the action would be uniform both up and down, and the strength of the tide would be condensed upon the given width, so that the effects would be greater in the ascent and descent of the stream than at present.

1479. With respect to the effect of a uniform width upon the tidal area which now exists in many parts of the river, do you think that compensation could be got by dredging?—I think that if the bed of the river be of soft material, the tide would naturally scour it, and bring it to a form which would give greater velocity to the tide than if the momentum of the tides were impaired by the wide expanse of river bed.

1480. You would get the advantage of a uniform flow and ebb of the tide?—Yes; it is of first-rate importance that the curves should be such that the tide may run along them. If you take a cross section of the river, you may find that the centre of the current may be 18 inches higher than any other parts of the section.

1481. Did you ever make any particular observations when old London Bridge was in existence?—I remember it.

1482. Was the effect of the removal of the bridge to raise the tides up the river, at Putney for instance?—It could not but have that effect. It was an actual dam; as soon as the tide rose to half-tide, it rushed up with considerable velocity, but soon it lost the previous power it possessed.

1483. (*Captain Galton.*) You consider it of more importance to prevent undue widenings of the river than to preserve the tidal water which those widenings give?—I think so; of the two, the prevention of undue widenings is most to be cared for; all undue widenings must reduce the strength of the current, which it does not regain except after some lapse of time and some loss of power.

1484. Should you consider it necessary or desirable in making an embankment to provide, by dredging the upper part of the river, for the area of tidal water which would be removed?—If the current were allowed to take its free course, and if the bed of the river were soft, it would form a good channel for itself; but if there were hard materials in the bed of the river I think that those hard materials should be removed, and the action of the tide allowed to take effect upon the bed.

1485. The hard materials should be removed to the extent of the maximum depth of the bed?—Yes.

1486. So as to preserve the average depth?—Yes.

1487. Are the lines which are marked on that map those lines which you recommend should be followed in an embankment?—They are what I should consider important to preserve a deeper channel here (*pointing to the map*), because we know the fact that the tides whether up or down will always cling to the concave side.

1488. You consider it desirable that the curve on the northern side should be flattened as far as possible consistent with the channel?—Yes.

1489. (*Capt. Burstal.*) Supposing instead of your line taking on the south side of the river half an arch of Waterloo Bridge, and nothing at Hungerford Bridge, it came out a little bit further into the river, you would maintain the same breadth?—I think it would be important to maintain the width of the river as nearly as possible to mean but tapering width.

1490. (*Capt. Galton.*) The more you diminish the curve and approach to a straight line the more uniform is the flow of the river, is it not?—I am of that opinion; as you will always have the deep water on the concave side.

1491. (*Capt. Burstal.*) You are aware that at present the navigable arch of Waterloo Bridge at low water is the second arch from the Middlesex shore?—Yes.

1492. Therefore, do you think the better plan would be to bring the embankment out to the second arch of the bridge, and to do all the rest of the work by removing those shoals and making a new river?—We might see the effect on the north side, and then we might dredge on the south side if necessary.

1493. The removal of all that shoal above and below Waterloo Bridge to the depth necessary for navigation, 5 feet below low water, would be a thing

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which should not be done, I presume, except with reference to the stability of the foundations of the bridge?—It would be dangerous to do it if it were to injure the foundations.

1494. In addition to a uniform and tapering width you prefer a uniform sectional area?—The uniform sectional area would depend very much on the position of the place. It would gradually diminish going upwards. We could not expect to find the same depth so far up as Richmond as we would here.

1495. I am alluding to the space between Westminster Bridge and Southwark Bridge?—In that short distance I do not think that there would be much difference.

1496. Supposing that, in the one case, you took in the first arch of Waterloo Bridge, and, in the other case, you took in the second arch, would there be any difference between the action of the current of the river in the two cases?—It would be the difference, between the two curves; that is, their centrifugal forces.

1497. The more you approach a straight line the more direct will be the action of the stream. Supposing that you extend the embankment to the second arch of Waterloo Bridge, the disposition of the current would be to wash every barge opposite that embankment, would it not?—Streams of the flood and ebb would impinge along the embankment, but the depth of the column of water would be greatest (*pointing to the map*), but more towards the middle.

1498. Are you aware that at various points in the river, namely, at the lower point of Limehouse Reach, at the Isle of Dogs, and at Blackwall Point, against which points neither the ebb tide nor the flood tide acts strongly, there are deposits of silt, and that that would necessarily be the case at the south side of Waterloo Bridge?—There are many circumstances that would derange the action of a stream, and no doubt, on the convex side, the stream must be comparatively weak, the centrifugal force driving the body of the water towards the concave bank, and which can only be mitigated by narrowing the width of the river bed where practicable, as I propose to do at Hungerford.

1499. (*Sir Joshua Jebb.*) Do you think it a right principle to take the present tidal area at each of the bridges, excluding the piers, and to endeavour to preserve that sectional area throughout the proposed distance?—I consider that the piers of the bridges would not in so short a distance materially affect the run of the tides, and therefore I do not see that any obstruction to any amount would arise. The case of old London Bridge shows how much damage might be done by undue contraction.

1500. Will you state in general terms in what respect your line differs from Mr. Walker's line?—I do not think that there is any material difference; something like this line has been proposed by various individuals; and therefore so many opinions meeting together upon it, we may consider that that line has been well considered. I selected three points on the north side of the river, viz., one near Blackfriars Bridge, one at the east end of Somerset House, and one near Whitehall Stairs, through which to describe a circular arch, and from the same centre to direct a parallel curve, on the south side, and which would form a riverway of the flattest form which circumstances would permit.

1501. Where does it intersect Waterloo Bridge and Blackfriars Bridge?—I take at Blackfriars Bridge the first pier, and at Waterloo Bridge the second pier.

The witness withdrew.

Adjourned to Tuesday next, two o'clock.

Tuesday, 4th June 1861.

PRESENT

The Right Hon. The Lord Mayor.	Captain D. Galton, R.E.
Major-Gen. Sir Joshua Jebb, K.C.B.	Captain Burstal, R.N.
John Thwaites, Esq.	Henry Arthur Hunt, Esq.

The Right Honourable The Lord Mayor in the Chair.

Mr. P. Nelson.

4 June 1861.

Mr. Park Nelson examined.

1502. (*Chairman.*) Are you prepared to say how far one or the other of the plans would affect the interests of the Middle Temple?—The benchers of the Middle Temple have appointed an engineer to inspect the plans and to report to them upon them. Till they have received his report they are not prepared to give an opinion upon the plans; by next week they would probably be able to do so.

1503. One of the plans suggests a railway; probably the benchers would rather not have a railway?—No doubt.

1504. Probably the benchers would prefer merely a broad embankment, upon which there should be a roadway?—They would like to know what height the embankment would be, they would rather that it were not much above the existing level.

1505. If your present platform were extended into the river so as to come out as far as may be required, to get an easy curved line along the north bank, probably that you would not object to?—I am not prepared to say what the feelings of the benchers are till the engineer has given his report; we attach great importance to the river frontage.

1506. You would rather not have a roadway in front of your Temple Gardens at all?—Certainly not, if we can prevent it.

1507. Supposing that you could not prevent it, probably you would like a roadway as far from the garden as possible?—Yes, and as low as possible.

1508. Putting aside the question who is to pay for it, supposing that you had a considerable extension of ground upon which you could plant trees, probably that would be the most agreeable way of modifying any objections which you would have?—Probably it would.

1509. *Mr. Yates* (*from Messrs. Chilton and Burton, representing the Inner Temple*).—Our views would be the same.

1510. You would rather not have an obstruction at all, some of the schemes being for a roadway carried on arches and pillars, with a railway, the question being simply a question between that and a plain level surface, you would prefer the plain level surface?

Mr. Nelson.—Quite so, there is one plan where is a dock in front, (*Mr. Lyster's,*) that might be very objectionable.

1511. Supposing that we took in 150 feet by our line of embankment, and supposing that about 80 feet were devoted to a roadway, and that you had the 70 feet within, would you prefer it so, or would you prefer having the road adjoining the present terrace with the means of planting between the road and the river?—I am not prepared to state that.

1512. What we desire to know with regard to the Temple is, whether, if the platform were carried out 150 feet or more, they would prefer the road next to the river having the ground between the road and

their gardens to plant or for whatever purpose they pleased, putting aside the question on what terms the land should be given them?—Upon that point in a few days after the engineer has reported I can give you an answer.

1513. (*Sir Joshua Jebb.*) The principle that would be the most acceptable to them would be a low level line and no railway?—As far as I know the sentiments of the benchers that is their opinion.

The witness withdrew.

MR. ROBERT ALEXANDER GRAY, MR. THOMAS EDWARD LAYTON, MR. HARDWICK, MR. MANN, (representing the City Gas Company), examined.

1514. (*Chairman to Mr. Gray.*) There is a plan there (*Mr. Bidder's plan*), showing a dock with an entrance into it, through the embankment, and there is a plan (*Mr. Shield's*) showing a similar embankment with a roadway upon it, leaving two margins, one next the wharf and another next the river. By the latter plan you would have a road 100 feet wide, a margin beyond it 50 feet wide next the river, and a margin between the road and your ground of 20 or 30 feet. Which in your opinion would be the least objectionable to your works, a dock as there proposed (*Mr. Bidder's*) or those margins (*Mr. Shield's*) upon which you could store your coals?—I have not much hesitation in giving an answer to that question. If it be intended to bring the road even with our works, we should have no access to our works at all by the river. It cannot be supposed that the company would have any objection to any improvement in the river, provided that it does not intercept our communication with the river. If we could have a sufficient water access to our works, and a sufficient width to lay barges in and to take coals out, that is a question that would offer little objection to us, but if the plan be to bring the road close to our works, it must be apparent to the Commission that we should be virtually shut out from our supply. When I inform the Commissioners that our business is between 50,000 and 60,000 tons per year, and in winter 2,000 tons per week, they will see that if any impediments are thrown in our way to bringing our coals in, the company is virtually annihilated, but a plan which gave us water space sufficient for laying our coals would be a plan to which we should not have any objection, so far as I can form an opinion.

1515. How many barges have you a day?—Sometimes we have 40 barges alongside, each barge containing 50 tons. When the navigation is impeded we have to use every means in our power to get an adequate supply; in the ordinary way we should not have more that 20 barges, but occasionally we have as many as 50 barges alongside. Our works extend some distance eastward and westward. If we had a sufficient space allowed us for about 40 or 50 barges in case of necessity, that would be satisfactory to us, but the suggestion of the Templars is very different from ours, because they would reclaim from the river to throw into garden,—if that be granted to them we are literally shut out.

1516. (*Sir Joshua Jebb.*) You mentioned that you would be satisfied if you had sufficient space,—would you state what you would consider sufficient space?—40 or 50 feet of water from the inner arch of the embankment up to our works.

1517. (*Captain Galton.*) A barge length?—We would want more than that. Easy access is most important. It is necessary that the arch should be of a sufficient height to allow barges to come in at proper times of the tide.

1518. Do you mean barges with masts?—No; the common coal barges.

1519. (*Mr. Thwaites.*) What height is necessary for the easy access of a barge?—Two feet more than a man's height; about eight or ten feet.

1520. (*Chairman.*) You want a clear headway eight feet above Trinity high-water mark?—Yes.

1521. That would necessitate the raising of the road to such a height as would greatly interfere with the comfort of the benchers?—No doubt the benchers would take care of their interests.

1522. If I understand you, you would be content with having a raised roadway running in front of your works provided the water were left under the roadway and between the roadway and your works?—Yes.

1523. With the most easy access for barges?—Yes; we want sufficient space for our barges.

1524. Supposing we were to have a road at the height which I spoke of, that is, three or four feet above Trinity high-water mark opposite the Temple, and then we began to rise as soon as we left the Temple, and went up with an incline so as to give headway for barges underneath, leaving as much water between and under as we could, that would meet your objection?—It would to a very great extent, but it must be apparent to the Commissioners that to bring an embankment adjoining our works would be destroying our property.

1525. (*Sir Joshua Jebb.*) If instead of having water up to your works, you had storeage under the arches under the road, and not so much headway, would that meet your views?—That would not obviate the objection. I hope the Commissioners will not have the impression that we are opposed to public improvements, but we are merely suggesting that that can be carried out without prejudice to our own interests.

1526. (*Chairman.*) Sir Joshua Jebb has asked this question, because in discussing your case it has been suggested among ourselves, that what you want is stowage for your coals. In the existing state of things you have a fleet of barges laden with coals, using them as warehouses, but if you had the means of unloading the barges you would not want the amount of waterway that you now do; but from what you have said we might perhaps modify that opinion at all events, for you have told us that you must have in the winter 2,000 tons in a week, and sometimes you have 20 barges in a day coming alongside?—That necessity arises in consequence of our wanting stowage where we are; we are limited for room; we have only stowage for 6,000 tons of coal; if that could be increased we should avail ourselves in summer of the opportunity to fill our stores, and it would rarely occur that we should require 2,000 tons to be alongside our works.

1527. (*Sir Joshua Jebb.*) Would not the stowage meet your requirements if you had an access from the river to the stowage under the road, and access also from your works?—It would not often happen that we should require that stowage; we have more than sufficient in summer.

1528. (*Chairman.*) Supposing that you had what I stated to you, namely, a water-way with the least obstruction, manifestly there would be a deposit of mud; how is that to be got over?—We have no mud where we are. I believe it is generally supposed that if this embankment is made the water will flow more rapidly than before, and probably scour that part of the river.

1529. What would be the effect of our forming a solid embankment opposite the Temple Gardens, projecting 150 feet beyond the line of your works, leaving you the water within?—I think that we could keep our works perfectly clear from any deposit of mud.

1530. (*Mr. Thwaites.*) You have a water-way from the Thames to your works?—Yes.

1531. What is the length of that?—About 300 feet.

Mr. R. A. Gray, Mr. T. E. Layton, Mr. Hardwick, Mr. Mann.

4 June 1861.

1532. What is the width ?—About 30 feet.

1533. You have at present a water-way into your works 30 feet wide and 300 feet long, what you are anxious for is, that that water-way should be extended through the works, so that the access to the works might be equal to that which you now enjoy ?—Yes.

1534. (*Captain Burstal.*) What you allude to when you speak of a water-way 300 feet long and 30 feet wide, is Whitefriars dock ?—Yes ; the part to the river.

1535. (*Mr. Thwaites.*) If I understand you rightly, if the water-way which you refer to were continued through any embankment, to be constructed of the same width as that which you now enjoy, that would be satisfactory to the Gas Company ?—Presuming we have a headway of 8 feet.

Mr. Layton.—That is only a small portion of what the company have, and which they have not the exclusive control of ; the chief water-way they have is in front of their works.

1536. (*Chairman.*) If you had a margin of water 50 feet wide wide, the whole length of your frontage, would that suffice, supposing that you had easy access to it ?

Mr. Hardwick.—It would not, because the length of our ordinary barges is 50 feet ; it is clear that at present we have a water-way 300 feet long, 150 feet out of which is covered with barges, to which there is free access at half-tide ; what you propose would leave us only 50 feet, out of which we should have to get into the dock ; 50 feet is the length of our barges.

1537. (*To Mr. Hardwick.*) Would it, in your opinion, be satisfactory, supposing that, not depriving you of the water altogether, we were to make our road rise by an incline from the Temple Gardens, with openings either supported by columns or arches, and we left you water-way under the road and against your embankment wall ?—I think if we had the whole of the space in front of our works out to the new line which you propose available, except the necessary supports for the road, partly for water-way and partly for the stowage of coals, we might make it answer our purpose ; it would throw difficulties in the way of carrying on our business, but that I suppose we must get over.

1538. (*Mr. Thwaites.*) You would have stowage under the roadway the whole width except that which was occupied by the pillars ?—Yes.

1539. Supposing the width of this Whitefriars Dock continued through the embankment, giving you a clear headway of eight feet under the embankment, and you had your river frontage here (*pointing to the plan*), would not that be satisfactory, supposing that your water-way were continued as now?—I think that if we had the power of laying barges alongside this new embankment, and we also had what Mr. Thwaites has suggested, a water-way the width of Whitefriars Dock, as far as the river and we had the whole control over that dock, that would answer our purpose.

1540. (*Mr. Thwaites.*) We cannot interfere with rights there, but supposing that this piece of ground were reclaimed, supposing that to be solid (*pointing to the plan*), and given up to the company, and that the width of that dock were continued to the front of the embankment, and this portion used as stowage, would not such an arrangement be satisfactory without having such a dock.

Mr. Hardwick.—The answer to your question would depend upon the area which you could allow us; we could not have the barges lying outside the embankment.

1541. Have you a barge bed here (*pointing to the plan*) ?—Yes.

1542. (*Captain Galton.*) Would it suit you to have access to the Whitefriars Dock, and to have stowage room under the road of the embankment with the river frontage which you would get transferred out to the edge of the embankment?—The difficulty would be in discharging the coals on to the ground which you would give us, the difficulty would be in bringing 8 or 10 barges to the point of discharge.

1543. (*Mr. Thwaites.*) Supposing that the water were continued out at here (*pointing to the plan*), and that you had here a tramway from the front wall of the embankment into your works, by which you could take in your coal into your works direct, would not that answer your purpose ?

Mr. Layton.—There is an impression that the water-way outside the embankment would be a great deal disturbed by steamers, and would not be available for lighters, that the motion of the steamers would not admit of unloading outside the embankment.

1544. (*Captain Burstal.*) You are apprehensive that a deep laden barge outside the embankment might be swamped ?

Mr. Layton.—Yes, if there were facilities given for unloading so far out. This curve project (Mr. Fowler's) is very objectionable to the Gas Company.

1545. (*Chairman.*) How wide are the coal barges?

Mr. Hardwick. From 15 to 20 feet.

1546. What is the length of your barges?

Mr. Mann.—From 50 to 70 feet.

1547. Supposing that we had a margin of water free from our road of the breadth of 70 feet between your wharf and the road, that would allow your barges to lie side by side, and supposing the whole of your 300 feet to be covered by barges, that would give you 20 barges at a time. Supposing that inner space of water to be perfectly accessible from the river under three or four different arches, your barges coming up and getting into their places, having room for 20 barges, the obstruction being the minimum that we could have, would it be possible for you to carry on your business so ?

Mr. Mann.—Yes, I think so.

Mr. Gray.—If we can be secured a sufficient water way it is all that we require, and we shall not ask more than is absolutely necessary ; if we could do with less than 70 feet we would. You have suggested 70 feet, and, so far as I can see, that perhaps would meet our wishes; but access to our works is indispensable.

Mr. Layton.—One question requires consideration, that is the turning of the barges.

Mr. Hardwick.—Some of our barges are 80 feet long ; we have given you the smallest when we gave 50 feet.

Mr. Mann.—The 80 feet ones are sailing barges that come to be loaded with coke ; a great deal of coke goes by water carriage.

1548. They come in light ?—Yes ; they are sailing vessels with masts, but they could strike their masts.

1549. (*Captain Galton.*) Do not they require 13 feet headway as a minimum ?—I do not know that.

1550. (*Chairman.*) Where do they go with the coke ?

Mr. Mann.—To Erith and lower down the river.

1551. Are those sailing barges an element that must be taken into consideration ; is it a matter of much importance ?

Mr. Mann.—We cannot control the parties who purchase the coke ; as regards the barge they send for it.

Mr. Gray.—I think that sailing barges are rather the exception than the rule.

1552. (*Sir Joshua Jebb.*) Could not you load them outside ?

Mr. Gray.—I dare say we could make arrangements with respect to that. We are anxious to meet the wishes of the Commissioners in every possible shape. We have applied to have our lease extended from 1863, and our object is to build a capacious warehouse for the extension of the storeage of coals on the Phœnix Works.

1553. (*Captain Burstal.*) You propose building a coal store where the rubbish wharf is ?—Yes.

1554. Where do you propose unloading barges for that store ?—In the dock.

1555. You have no property on the west side ?—We have a lease.

1556. Are you apprehensive of not being able to bring up barges safely there ?—There is no question about being able to bring them up safely.

1557. (*Mr. Thwaites.*) You think that it would be possible to keep that dock thoroughly clean ?—Yes.

1558. Does any refuse pass into that dock now ?

Mr. Layton.—Not from the gas works. By the present system of purifying the refuse has a commercial value.

1559. (*Captain Burstal.*) It is to be supposed that if there were two or three openings into this 70 feet water space, the ground inside the railway being made on a little incline, the wash of the steamers and the barges resting on it would wash the mud out ?

Mr. Gray.—Yes; no doubt there would be no accumulation of mud there; we would devise some mode of doing it.

Mr. Hardwick.—We should pave the whole of that water way.

Mr. Layton.—If it was paved with a gradual incline it would clean itself.

1560. (*Sir Joshua Jebb.*) Would one opening 60 feet wide be sufficient ?

Mr. Gray.—We would rather have two of 20 than one of 60 feet.

Mr. R. A. Gray, Mr. T. E. Layton, Mr. Hardwick. Mr. Mann.

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The witnesses withdrew

Mr. Josiah Harvey examined.

Mr. J. Harvey.

1561. (*Chairman.*) You have a wharf immediately west of the City Gasworks ?—Yes.

1562. What is the frontage of your wharf ?—120 feet.

1563. What is the nature of the business which you carry on there ?—A flour trade, a timber trade, a coal trade, and a general wharfage business.

1564. (*Mr. Thwaites.*) How far does your property extend ?—From Phœnix Wharf on the east to Reid's Wharf on the west.

1565. You have simply a river frontage ?—We have a river frontage of 150 feet, and a dock under our warehouse 90 feet long. The extent of the wharf from the river inland is 300 feet, and from the campshed to low-water mark is above 208 feet.

1566. (*Captain Galton.*) Supposing this plan (*Mr. Bidder's*) to be adopted, with a roadway in the river, and a waterway behind it, would that give you convenient access to your dock ?—It is the waterway that is the most valuable part of our premises. As I understand the plan, the proposed roadway is 150 feet wide; that will take away three-fourths of our roadway, which will be a very serious loss.

1567. (*Sir Joshua Jebb.*) What is the width of the shore ?—120 feet wide by 208 feet out.

1568. (*Mr. Thwaites.*) The fore-shore is not your property ?—It is considered our property, because the lease entitles us to the use of it.

1569. (*Chairman.*) In point of fact you do use it ?—Yes; we could not afford the rent we pay for the premises if it were not for that.

1570. What rent do you pay ?—900*l.* a year.

1571. You carry on a very large business there in flour and timber ?—Yes; and general wharfage.

1572. Is the business of the wharves on that side of the river near about where you are, diminishing, or stationary, or increasing; I do not mean with regard to your particular wharf, but as a general question ?—In my memory there were a number of wharves which are now occupied by the Gas Company; and, therefore, if we were to embrace those, taking a period of 30 or 40 years back, then the trade has lessened; but, leaving them out, I should consider haat the trade is as large as it ever was.

1573. The requirements of the public with regard to flour are as great at that part of the river as formerly ?—Quite as great.

1574. You do not imagine that the new system of railway facilities has done anything to diminish the trade in flour on the banks of the river ?—We receive a great deal of our flour by railway, but we prefer it by the river.

1575. Where do you send it to ?—All over London.

1576. You receive a great deal by railway ?—We receive some by railway, and some by barge, as it may happen; our principal supply comes by water.

1577. Supposing that all the flour wharves on the Thames were removed, and that it was necessary to carry on the business inland, all the flour would then have to come by railway; is that possible ?—I think it is.

1578. (*Captain Galton.*) Why do you prefer it by the river ?—Because our machinery is arranged for receiving goods by water, and because the principal part of our trade is with the counties bordering on the coast, or connected with the River Thames; and because the expense of cartage from the railways is from 3*s.* to 5*s.* per ton.

1579. Is the whole of the flour which you receive for consumption in London ?—Yes.

1580. What other trade have you ?—An English timber trade.

1581. And that comes by river ?—That comes by river.

1582. For consumption in London ?—Yes.

1583. (*Mr. Thwaites.*) Do you mean timber coming down the Thames ?—Up or down; but we also receive a good deal of foreign timber, which is brought from the ships or docks in rafts to be craned.

1584. Supposing that you had a tramway underneath the embankment, so that you could take your goods in from the front of this wharf on the tramway, and carry them back, would that answer your purpose ?—It would confine me to that particular spot at which to land all my goods; and I could only have two barges alongside at one time; but at present I could conveniently place in our water-way 20 barges, from any of which I could back goods when they were aground.

1585. Have you access from that dock to your premises ?—There is a dockway under this warehouse (*pointing to the plan*); there is a dock which goes under the centre of that warehouse, so that we are at work all along the whole of the frontage of our wharves wherever a particular description of goods which we require happens to lie.

1586. (*Mr. Hunt.*) You are a wharfinger ?—Yes.

1587. And you let out your warehouse for the stowage of goods ?—Yes.

1588. Is the largest proportion of your trade derived from goods brought by water and warehoused, or is the larger proportion of it brought by carts ?—The larger portion is brought by water.

1589. That is principally flour ?—Flour and timber.

1590. Do you house the timber ?—Some is housed and some we place upon the ground of our wharf, which is 300 feet deep.

1591. (*Sir Joshua Jebb.*) Do you think that your interests would be injuriously affected if a solid embankment were made along your warehouses ?—Very much, it would entirely spoil the premises for our particular trade.

1592. (*Captain Burstal.*) By which way do you think you could get your cargoes quicker to your warehouse, by means of access through dock gates where you would have to wait for the tide, or by means of unloading at an embankment, trucking them across to your warehouse where the embankment was sufficiently far into the river to admit of barges coming alongside at any time of the tide ?—If the bottom of the river was dredged, so that barges could come alongside at any period of the tide, I should have the additional height to lift all the goods, and that would be a drawback.

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1593. That is, as far as height goes; that is not as far as time is concerned?—The higher I have to lift the goods the longer it must take, and also increase the expense; the swell also would make it unsafe, and increase the wear and tear of the craft. I beg to add, the greater part of our goods do not go into warehouse at all; the barges are really our warehouses, in which the goods which are not perishable lie until they are carted to their destination. If I were confined to the two barges alongside, it would be almost impossible to land all my goods; and even if I could by machinery keep constantly at work, I must find room ashore for the goods, and then I should have to lift them a second time to load them away, which would be attended with great expense and loss of time.

1594. As far as the swell of the water is concerned, do you believe that your barges at present when lying alongside from the time they float to the time they ground again are ever disturbed or endangered by the swell of the steamers?—Yes, sometimes so much so that it becomes really dangerous for the men to move, but that is the exception.

1595. Is that because the barges are so deep?—No, it is because at the top of the tide the steamers come closer in and make more swell, and you are aware that the men travel upon planks from barge to barge.

1596. Supposing that you had cranes for the purpose of unloading those barges readily, directly they come alongside, and supposing they came up with the young flood and got to your wharf an hour after low water, and then began to unload, then could not it be possible to unload them by the time of high water, in about four hours?—It depends upon the quantity in the barge, and the nature of the cargo; and whether the customer is prepared to take in the goods. We had a vessel the week before last from Portland, with a cargo of stone, which took us three days to unload, because the consignee was not able to take it in quicker.

1597. Supposing it were a cargo of wheat?—Sacks we could unload quickly.

1598. Under those circumstances, that barge would be unloaded in that tide, and be off down the river with the next ebb?—Yes.

1599. That would not be the case if she were brought into a dock and detained there?—No.

1600. Would not you under those circumstances have to pay an additional price for the hire of that barge remaining at your premises unnecessarily?—No.

1601. How do you pay for your barges?—By the trip or by the tide.

1602. Then if that be the case, if you went into a dock you must remain three tides?—Till the next ebb.

1603. Therefore under those circumstances, if you could readily dispatch your barges you could make arrangements with the lightermen to get the work done more moderately?—Yes, but you would require more men to be ready at the time the barge comes in.

1604. Have you found any difficulty in getting your cargoes of coal from your premises up to Fleet Street from the steepness of the gradient?—None whatever.

1605. The gradient is not so steep at your premises?—No; at Milford Lane it is very steep. I beg leave to state that from the evidence which I have heard given we should find difficulty in getting the sailing barges in, such as I have spoken of from Portland, which do not displace their masts; they lower their masts to a certain extent, but they do not take out their masts.

1606. (*Mr. Thwaites.*) What headway would those require?—I think about 13 feet would do for small vessels with one mast; but if they have two masts they require 20 feet.

1607. (*Captain Burstal.*) There is no trade in stone except at your wharf in that immediate locality?—No.

1608. How many cargoes a month do you receive from Portland?—Very few per month from Portland; but we frequently have the same description of vessels from Yorkshire and other parts of the coast; we have a powerful crane, the only one in the district, and we take in anything that offers.

1609. (*Chairman.*) I presume that any kind of embankment there would be very objectionable to you, especially if we keep it level in front of the Temple Gardens, so as not to be able to give you any great headway under it?—The small headway mentioned, viz. 13 feet, inside, is not the chief objection, because if we had 70 feet as it was suggested to give opposite the gas works, that would give us room to raise the mast again after we got under the roadway, and we should be able to unload our barges as now.

1610. What would be the minimum headway that you would require?—We should like it clear to the sky.

1611. What would be the least headway?—I am not prepared to say. 13 feet would enable some barges to pass under.

1612. Supposing that the requirements of the public necessitated our destroying your wharf as a place of business, you would then have to remove and find warehouses elsewhere; could you carry on your business, such as you now carry on, inland?—I could not.

1613. Could you carry on the business which you now carry on on a wharf higher up the river above Westminster Bridge, or on the south side?—No, it is the facility of communication with the north of London and the centre of London that commands the trade.

1614. Is it a trade in flour or merely a wharfinger's trade?—We deal in flour and timber.

1615. You have a trade in coals also;—Yes; the trade in flour could be carried on by other means, but the wharfage trade could not, that depends entirely upon the river side.

1616. The coal trade could be carried on inland as it is carried on in a great many parts of London now at the railway station?—Yes, there is Newcastle coal certainly carried by rail; it can be carried on to a certain extent.

1617. A very large portion of the coals consumed in London is now distributed from the railway stations?—A very large proportion.

1618. If the whole of the trade in coals required for consumption on the north side of London were compelled to be carried on at railway stations, it could be done?—I do not think it could.

1619. Your difficulty would be with regard to your timber?—Yes, it would be attended with greater expense if we had to take the coals by railway, because at present our barges go alongside the colliers, and the next tide brings them to our wharves, but it would be practicable to do the trade by railway to a certain extent.

1620. Those questions are suggestive of your having to leave your present business?—It is practicable certainly.

1621. Have you a long lease?—Yes, with a promise of renewal.

The witness withdrew.

Mr. Frederick Helmore examined.

Mr. F. Helmore.

1622. (*Chairman.*) Is the business at your wharf entirely a coal trade?—We are wharfingers as well; we occupy premises in rather an exceptional part of the river, in Scotland Yard; we have at present much water way, which is of very great value to us; our frontage is not so large, but we have a great

depth of water way; we land timber at our wharf, and we also land ale and iron and all sorts of goods, and we have floats of timber lying there. The embankment would do away with our trade as wharfingers; it is impossible to bring up floats of timber and to cart them away immediately. It is all very well to say you can have wharfage goods up and have them running off the place at once, there are so many things connected with it which prevent our being able to do so. I heard a remark connected with the City Gas Works as to their craft, but their coals would be brought up in dumb barges, and they are not of any great length, but there is a very large class of goods, particularly at our wharf, brought up in sailing craft. You asked in the case of the gas works whether that coke might be taken away in other craft, but the question is where those goods are to be taken to; dumb barges are only usable in certain portions of the river, only to a limited distance below bridge, then larger sailing craft would be required. Therefore, the wharfingers would rather that the river should remain as it is. We know that it is a public necessity that some plan must be adopted, but depend upon this, that any plan which would not provide a mode of carrying on trade with the present means would be highly objectionable. Anybody passing over the bridges must see the quantity of sailing craft that now come up above bridge. Since the bridges have been enlarged we have had billy-boys of a larger class than formerly, and, indeed, we have schooners up which lower their masts.

1623. You say that you have not much water frontage?—No.

1624. How much is your water frontage;—I do not think it is above 100 feet, with 400 or 500 feet running out.

1625. How far back do you go?—It is a long strip,—it comes into Scotland Yard.

1626. Have you a long lease of it?—No.

1627. I am apprehensive that if we do that which the public require we should destroy your business altogether. If your business were destroyed altogether have you thought where you would go to?—It would really as a fact destroy our business. At the present time wharfage is very difficult to be got; wharfage is required by a party in that portion of the town where his delivery lies. Our business is comparatively central. Our great expense is the cartage. Supposing that we could obtain our wharfage at another part of the river at a greater distance so that a team of horses would only do half the work in the course of a day, that would be a great additional expense. We are all aware that only lately a great deal of wharfage has been taken away at Pimlico; the whole of the canal which was occupied by the timber and coal trade is completely taken away. You cannot say you can go up or down the river; the distance has a great effect upon cartage, the delivery of goods is a very great expense, and that expense must be governed by the distance which the goods have to be carted. We ourselves should lose our trade altogether; we cannot take it to another part; we could take a portion of our coal trade, but that we should do at a greater expense. As to bringing coals by railway the larger quantity of coal is brought by sea still, the number of screw colliers is increasing day by day. It is true that they unload at the Victoria Docks, and that a great portion of the trade may be brought by rail, but for the western part of London the greater proportion of the coals still comes up by craft. If we had to bring our coals to the nearest point of the North London Railway, if we had to draw our coals from any station, it would double or treble our amount of cartage, and in time the inhabitants of London would feel the effect of it, because it must be paid for in some form or other.

1628. Some of the colliers go into the Victoria Docks now, but are there not some also which go into the West India Docks?—Yes; for easier distribution the Victoria Dock is the great place for unloading those colliers—they have facilities in the docks for unloading those large steamers, which are not available in the river.

1629. You have said that you are general wharfingers as well as coal merchants?—Yes.

1630. The other commodities which you land are, what?—Timber, bricks, iron, and ale; we have the only crane at this end of the town.

1631. Where does your timber generally come from?—It floats from the docks.

1632. (*Captain Galton.*) Would such a system of docks, as proposed by Mr. Bidder's plan, interfere with your business very much?—Anything curtailing our wharfage is an injury to us, but it is a question of extent.

1633. (*Sir Joshua Jebb.*) What is the nature of the right which you exercise in front of your wharf into the river?—We have piles driven in the bed of the river by permission of the Thames Conservancy, and to those piles we have the right of mooring our barges.

1634. Are those rights secured to you in the lease?—I do not know.

1635. (*Captain Burstal.*) All the piles on the foreshore of the river are only there during the pleasure of the conservators, and can be removed at a day's notice?—Yes.

1636. (*Captain Galton.*) What rent do you pay for your wharf?—150*l.* a year. Our ground is small, but it is the water way.

1637. (*Mr. Thwaites.*) The 150*l.* a year represents its value?—No.

1638. Why not?—We have not a lease of the premises; it is not their value.

1639. (*Captain Burstal.*) Your principal place for storing is the foreshore of the river by means of barges?—Yes.

1640. You have no store room on shore?—Comparatively little.

1641. What do you do with the timber when it is to be distributed?—It is carted away; it lies in the water till it is carted to its destination.

1642. Do you trade in hay?—No.

1643. Are you aware of what the people who trade in hay do with the hay; do they store it?—It goes off.

1644. It is generally chartered and carried away at once?—To a certain extent; but if they have any large arrival their barges lie there for days.

1645. The barges of hay lie on the river waiting for sale?—No; it is sold but on large arrivals; even if it is sold they cannot increase their horses and men to cart it out; it must wait its turn.

1646. With respect to the coal trade, you have said that you would not be able to carry on your trade so conveniently and so economically if you were driven to any other part; how does it happen that the people who have a large coal trade on the Surrey side of the river manage to carry on their trade, we see their waggons in all parts of London?—So you will see ours in the same way, but the bulk of their trade is in that locality. A man when he takes a wharf considers where the bulk of his trade lies. If mine lay at the east end of London I should not take a wharf in Scotland Yard, but if they give me an order at the east end I am happy to deliver it.

1647. (*Mr. Hunt.*) Messrs. Cory on the south side have the largest business in London?—Not the largest carting business in London, they have a large barge trade; you seldom see Cory's waggons on this side of the water comparatively.

1648. (*Captain Burstal.*) You see Cockerell's on the south side?—Yes; and he has several wharves, and that shows the necessity of it; he has those several wharves for the economy of cartage.

1649. Do you think that any public advantage is derived from having a store depôt at Scotland Yard?—I think so, decidedly. If the river coal merchants are done away with, or are compelled to go to railway termini, it would be a public loss decidedly.

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1650. (*Mr. Hunt.*) Why so?—Because it must increase the cartage of the coal.

1651. The Great Northern Company supply coal at the same price as the river coal merchants?—They do not supply all the coals; there is a class of coals which they have not the supply of.

1652. (*Mr. Thwaites.*) That is on the assumption that all the coals must be fetched from the railway station; but suppose you could obtain a wharf of the capacity of yours at 150*l.* a year elsewhere?—We do not say we *could* not get a wharf elsewhere, certainly not one suitable for our trade, either as to situation or rent; it must be a great loss to us and the public *if trade is generally displaced* from our side of the river. We do not say that we could not, but you put it as a general question, if the trade is generally displaced.

1653. (*Captain Burstal.*) You attach much importance to the water space in front of your premises at Scotland Yard; do you not also attach a great deal of importance to the fact of the barges which convey the coals being detained out in the river till they can get in?—No, there are always two tides in the day.

1654. How many barges do you have up in a tide?—Perhaps two barges; sometimes one; sometimes none; and sometimes several; sometimes two or three floats of timber, and a barge of ale.

1655. Then, if you had docks there, you would still want to retain that space for the same purpose for which you hold that space now, namely, for the barges to lie there and to be discharged into carts as required by your trade?—Yes.

The witness withdrew.

Mr. J. M. Macey.

Mr. James Mugford Macey examined.

1656. (*Chairman.*) Where is your wharf, does it adjoin Mr. Helmore's?—I occupy Milford Wharf between the Temple and the Duke of Norfolk's property; the wharf on the west side of my property is the eastern boundary of the Duke of Norfolk's property, between Arundel Street and Essex Street.

1657. What business do you carry on?—That of a builder.

1658. The purposes for which you require a wharf are the landing of bricks and timber, sand, and cement?—Yes, and I have timber lying in front of my wharf. I let a portion of my wharf to Mr. Holl the coal merchant, who has coal barges lying there. I merely reserve to myself in the letting to him a space for one barge—one barge at a time being as much as I generally want.

1659. The premises which you hold altogether have a frontage of how much?—66 feet, including what I let to Mr. Holl.

1660. Is it on lease?—Yes.

1661. Belonging to whom?—Mr. Paul Bevan.

1662. (*Mr. Thwaites.*) What rent are you paying?—300*l.*

1663. (*Mr. Hunt.*) Are there any buildings on it?—Yes, there is a building on it which was once used as a granary which I at a considerable expense have converted into workshops.

1664. You land goods there for other people as well as yourself?—A little; I have put a crane on the wharf for that purpose, and occasionally use it.

1665. (*Mr. Thwaites.*) But for the purpose of landing bricks and sand and so on you could carry on your business elsewhere?—Except for the facilities, which are very considerable.

1666. (*Mr. Hunt.*) Have you any saw mills?—Yes, I have a steam engine.

1667. And mills for sawing timber?—I saw my own deals on my premises; I do not saw my own timber, the engine is not sufficient for timber.

1668. Where is your timber sawn?—On a pit; the crane taking it out of the water swings it round and puts it on the sawpit.

1669. (*Chairman.*) Any kind of embankment in front of your premises would greatly interfere with your business?—Yes, and all water side premises; of course they depend upon the water principally.

1670. (*Captain Galton.*) The chief advantage of the water in front of you is to give you floating room for your timber?—No, if I had no water way I should immediately lose Mr. Holl as a tenant, because he uses it as a coal wharf; that would be a clear loss to begin with.

1671. (*Sir Joshua Jebb.*) Anything like a solid embankment would put a stop to your business?—It would as far as my water side business is concerned.

1672. (*Mr. Hunt.*) It would not destroy your business as a builder though it might reduce your conveniences?—I should try not to let it destroy it.

1673. (*Captain Burstal.*) There are two or three wharves in your locality to let now?—Yes.

1674. They have been to let for a very long time?—Not long I think, there has been a board up a long time but though it has been to let I do not think the lease has run out till lately.

1675. Can you assign any reason why it should not be let in that locality?—I cannot.

1676. Is it fair to assume that the ascent to the Strand is so steep that it is difficult to get heavy cartage up to it?—That the ascent to the Strand diminishes the value of the wharf, there is no doubt.

1677. Mr. Holl has found some difficulty, has not he, with his horses?—Of course it takes more horses to pull up hill, it is a mere question of cost.

1678. It takes five or six horses to pull up those narrow passages to the Strand?—Yes; it may be seen on any day that that which four horses draw on level ground requires six to take it up the hill.

1679. There is considerable loss also from the death of a horse every year, is there not?—I am not aware of that; I never lost a horse myself except from old age.

1680. (*Captain Galton.*) What rent does Mr. Holl pay you?—80*l.* a year. I let off, altogether, premises to the amount of 130*l.* a year, that rent being partly derived from some warehouses formerly used as ale stores, but not now used for that purpose; there is considerable difficulty in getting large premises, such as I now occupy, with a frontage to the main thoroughfare of the river Thames, which frontage, now that so many persons pass in steam boats, is almost as good as the Strand.

1681. (*Mr. Thwaites.*) What depth have you?—Nearly 200 feet.

1682. (*Captain Burstal.*) Would it be much difference to you if you had a roadway on an embankment in front of your premises for access to the land?—As far as the roadway is concerned it would decidedly be an advantage provided I did not lose my water-way; if I could retain my water-way and have the roadway also I should have no objection.

1683. In landing timber, bricks, and sand, how many barges have you during a week?—It depends entirely upon circumstances.

1684. How many do you have in the year?—It depends upon the building business, it ebbs and flows so much; sometimes more than others; it depends upon whether my business happens to lie in the neighbourhood.

1685. I observe that in that neighbourhood the whole of the wharves are choked up with barges laden with coal?—Principally; I have a width of 66 feet; a coal barge is 15 feet wide; when I have no barge unloading Mr. Holl puts his barge in the place I reserve to myself.

1686. Have you formed any estimate of how much you will be the loser in being deprived of the direct access to the water side, with barges loaded with

bricks and sand ?—One of the great uses of the water is affording me facilities for getting my timber ; as regards the other things, there have been instances of one barge lying off while another was unloading, but perhaps one a week was quite the extent of my use.

1687. What is the length of your lease ?—I can hardly answer that, because sometime since having laid money out, I had the promise of a renewal. I have 16 years left.

1688. (*Chairman.*) With the understanding that it is to be renewed ?—A positive understanding that it is to be renewed.

1689. (*Captain Burstal.*) If these barges that come to your premises with timber and bricks could come outside the embankment, and the goods could be trucked into your premises directly across the roadway, would that be a serious inconvenience to you ?—As far as my business as a builder is concerned, I am not prepared to say it would be a serious injury; it would be an injury, but not a very great one.

Mr. J. M. Macey.

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1690. Do you apprehend that the craft that came to your place loaded with bricks and sand would be endangered by lying outside the embankment ?—I am not prepared to say.

1691. Have the barges decks ?—Some of them ; the brick barges have, they come from the brick neighbourhood ; the brick barges come out of the Medway.

The witness withdrew.

Mr. JOHN DOWNEY examined.

Mr. J. Downey.

1692. (*Chairman.*) You are a lighterman ?—Yes.

1693. Have you any premises between Westminster Bridge and Blackfriars on the north side of the river ?—No.

1694. You come prepared to answer any question, and are ready to give information with regard to the effect this embankment would have upon the navigation of barges ?—Yes. I feel very interested in this question, getting my living, as I do, on the water ; my father having been a lighterman before me, and I having 100 barges at work, employing seventy men and apprentices ; I am anxious that the embankment should not be placed too far into the Thames. I am in favour of a solid embankment, but not too far into the Thames, lest it might destroy in a degree the River Thames, which, to my mind, would in the same degree destroy the prosperity of the city of London.

1695. You are in favour of a solid embankment if it did not protrude too much into the river ?—Yes.

1696. Supposing a line of embankment were made, taking in the first arch of Waterloo Bridge, and coming out to the pier of Hungerford Bridge, and then going on in an easy curve till you get to Westminster in a line with the embankment of the Houses of Parliament, would that be the sort of line you would approve of ?—Yes, taking one arch of Waterloo Bridge.

1697. (*Sir Joshua Jebb.*) This takes two ; Mr. Fowler's plan. What do you say to that ?—When I fancy those two taken in I do not agree with it at all.

1698. (*Chairman.*) In your business as a lighterman, have you much to do with the wharves between Westminster and Whitefriars on that side of the river ?—No ; not a great deal. I go sometimes to Whitefriars. I go occasionally to Mr. Harvey's and to Whitefriars Draw dock, not the Blind dock; but I know, more or less, all the wharves in the proposed line of embankment.

1699. I gather that you would not recommend our going far enough into the river to make docks between the embankment and the existing shore ?—Certainly not. I would recommend not to do it, as an experienced lighterman working at it myself, having served my time to it. I have heard some of the evidence given here, especially about the City Gas Works, which, of course, is a very important part to be considered. No one would wish but that the City Gas Works should have plenty of accommodation ; no one would wish to see London partially in darkness in winter for want of accommodation; but I heard the chairman of that Company say that two or three twenty feet openings would be better than one of 60. I am sure that would be a mistake, because the run of the tide would cause the barge to pass in through the 60 feet opening, but not in the 20 feet entrance cleverly.

1700. (*Mr. Hunt.*) The entrance to the Grosvenor Canal is not very good for that reason ?—No, that is very bad.

1701. (*Sir Joshua Jebb.*) You are clearly of opinion that one large opening of 60 or 70 feet wide would be better than two or three small openings of 20 or 30 feet ?—Yes. With respect to the coal trade I have heard the Victoria Docks mentioned, and I have lightered coals from the Victoria Docks in very large quantities, and I know some of the facilities there are there for unloading, for I have received a thousand tons of coal out of a screw steamer in the Victoria Docks into my barges in about 10 hours, namely, 100 tons an hour. It seems to me that, looking as a citizen of the world at this question of the embankment, not from the narrow view a lighterman might be supposed to take, that the coal trade could be satisfied by other means than are applied to it now, and the coal merchants would not be at all the losers. I cannot see why so many barges should be necessary, to be lying about loaded with coals. The Victoria Docks would be a large depôt they might load twenty barges representing a thousand tons ; they need not bring them all at once to lie at the wharves, and they could by a steam tug bring the coals from the Victoria Docks to the City Gas Works or the wharves where they are wanted at the rate of six barges per day.

1702. The steam tugs would haul the barges up ?—Yes; the question would arise whether they would incur extra expense. I say, no ; because whoever buys coals at the Victoria Docks buys them cheaper than at the market, because the facilities of carriage by these screw colliers, and the facility for unloading by the hydraulic lifts make them cheaper to the purchaser.

1703. Do you see any great difficulty in barges lying outside the wharf wall when there should be six feet of water at all times of the tide ?—Not to an ordinary dumb barge, because she would always be afloat.

1704. (*Captain Galton.*) Would the wash of the steamers interfere with them at all ?—That we have to contend with now ; the outside barges have the wash of the steamers, they are quite as far out at the City Gas Works as the embankment wall would be.

1705. (*Captain Burstal.*) There is a part on the river I will draw your attention to, which will probably settle that question. There are some wharves immediately above Vauxhall bridge that have been only completed during the last two or three years, established in consequence of the Grosvenor canal having been filled up ; if there is any serious damage arising to barges deeply laden with coal, one imagines it must have occurred to the barges off those premises, just above Vauxhall Bridge. Have you ever heard of any barges having been swamped and sunk there ?—No ; I do not remember any.

1706. Those barges are not always afloat there ; they are subject to more action of the water than if they were buoyant ?—Yes ; because where they catch the ground inside they have to curtsey till they get to the ground outside.

1707. Steamers pass as close to those barges as they would to any line of embankment, do they not ?—Yes ; because the steam boat pier is not far from there, and that would naturally bring them in pretty close to those wharves.

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1708. (*Sir Joshua Jebb.*) When you said the trade would not be materially interfered with by having a less number of barges afloat, did you refer to the greater facilities that there would be for bringing up barges and unloading them, or to their being able to find other places for the deposit of coals?—I take both those matters into consideration, and I know there would be a great saving in barge hire if less barges are used; and the embankment will give more wharf, if it gives less waterway. Then if a coal merchant requires more barge room than he can have outside any embankment, I take it that, besides the depôt I have named of the Victoria Docks, there will be roads or moorings not far off which I should think the Conservators would put down, so that the barges need not all lie in at Scotland Yard, or at the City Gas Works, as they cannot all unload at once.

1709. Some of the plans provide docks on the inside of the embankment, and some are for making a solid embankment. There are engineering difficulties in the way of giving access into those docks, which in some instances necessitate the raising the road to a high level; supposing those difficulties to be so great that it should be determined not to have those docks, but to have a solid embankment, how would the trade be carried on then?—I have studied that question. I am a wharfinger at two places. I have one wharf at Nine Elms and one at Wapping; if I could have more ground given to me in front I should be glad of it, and I think with some few exceptions the wharfingers will eventually be quite as well off as now.

1710. How would you get your goods into the warehouse across the road?—No; I should think the quay of the embankment would be lower, so that I could land over that to my store room, and the road would be overhead.

1711. (*Captain Burstal.*) Supposing a road were made on a level, say, four feet above Trinity high-water mark, and the whole were made solid up to the present wharves, how would the trade be carried on at those places of business?—That would be difficult, because when you say "road" you mean a road for all sorts of vehicles, and I do not see how that could be done without difficulty.

1712. (*Mr. Hunt.*) The wharfingers' business would be destroyed?—Yes.

1713. They would be obliged to move their business to some other place?—Some of them would, no doubt.

1714. (*Sir Joshua Jebb.*) The instructions to the Commissioners are, that we shall report upon the plans that in our opinion provide with the greatest efficiency and economy for the relief of the most crowded streets by the establishment of a new and spacious thoroughfare, and for the improvement of the navigation of the river. If that road were carried at a low level under the bridges there would and be great difficulty in getting to those docks?—Yes; if we had to cross a thoroughfare to get to the wharves, it would be destructive to the trade I should think.

1715. In that case the road would become one extended wharf?—Yes.

1716. And that would be inconsistent with a complete thoroughfare for the traffic?—Yes; I could not entertain the two ideas together of a wharf and a thoroughfare.

1717. (*Mr. Hunt.*) Supposing that all these coal wharves were done away with, would the public pay more for their coals a ton?—It is a question. The railway coals are very good; I have burnt them myself.

1718. Supposing I, living in Eccleston Square, had my coals from Mr. Cory, Mr. Cory would supply me with coals at the same price as Mr. Helmore, though Mr. Cory has to cart his coals nearly a mile further than Mr. Helmore would have to cart his?—Yes.

1719. So that if Mr. Helmore were put on the south side of the river, people would not pay more for their coals than if they had them from Mr. Cory?—No; I do not think that they would.

Mr. Helmore.—I do not mean to say that if a person were removed to a distance of a mile for instance, he would not be able to supply his coals at the same price, but supposing you displace the people from all those wharves, how is it possible for them to find other places to carry on their business.

Mr. Downey.—I should say that they could find enough places.

1720. (*Sir Joshua Jebb.*) Equally desirable?—Perhaps not for that immediate neighbourhood, because the closer you are to your customers the better.

1721. You stated that coal merchants could supply themselves at the Victoria Docks at a cheaper rate than they could on the market; are you aware that coal merchants may buy out of screw colliers, whether in the river or in the docks cheaper than out of a sailing vessel, from the fact that you have to take the coals out of the screw vessels in a quicker time, and also from the fact that the coals out of screw colliers are not so good in size as those out of small sailing vessels?—I am not aware of that.

1722. (*Mr. Hunt.*) Does a lighterman charge more for bringing a barge of coals to Vauxhall than to Westminster Bridge?—No.

1723. (*Sir Joshua Jebb.*) Are his charges the same to all localities?—No; certainly not.

1724. (*Captain Galton.*) Is the charge regulated by the distance?—Yes.

1725. (*Mr. Hunt.*) Not by tides?—No; by the distance principally, but there are many questions which you have to take into account; namely, the nature of the work, the magnitude of it, and the competition.

1726. (*Sir Joshua Jebb.*) The question of distance is somewhat modified probably by the facilities of working by steam tugs?—Yes.

1727. (*Captain Burstal.*) You referred to the City Gas Works. You have probably given some serious consideration to the question of the supply of coals to those works; in what way do you anticipate that they would be supplied with their coals in case of an embankment being formed?—I thought that a cutting of some kind might be made in the embankment to enable them to have enough barges to lie.

1728. A dock?—A dock.

1729. With one opening?—Yes; or altogether a cutting in the embankment.

1730. So that the barges should pass under the road, do you mean?—An opening altogether in the embankment.

1731. So that the roadway should stop short altogether?—Yes; I looked only at the road as a quay.

1732. You forget all about the roadway?—I thought that the embankment would be a quay all along without traffic along it.

1733. (*Mr. Hunt.*) You contemplated a lower level and an upper level?—Yes.

1734. (*Captain Burstal.*) You thought that the quay would be for wharf purposes, and the upper level for the road?—Yes; then you could retire the embankment into the City Gas Works the whole length of their frontage, and give them about 60 feet width of water-way which would represent three barges, and 300 feet in length, which would represent six barges, so giving them accommodation for 18 barges, which I think would be enough. The chairman of the City Gas Works said that they had 40 or 50 barges sometimes at a time, but what good was it to them to have them there? Even in winter they do not unload more than 10 in 24 hours.

1735. Do you think that the barges would lie safely there, particularly in winter time?—Yes, they would be perfectly safe there; i. e. in the cutting.

1736. How would you like a dock with two or three entrances, where the water was always going in or out?—I should not like that so well; it would collect mud. I prefer the cutting.

1737. Would there be any difficulty in getting barges through openings of that sort, supposing that the openings were 40 feet wide, the stream running

pretty strong ; I am referring now to the City Gas Work ?—I do not think that there would be much, because they could regulate their business, having it all to themselves.

1738. You expressed an opinion that the dock at the Grosvenor Canal was not very available ?—It is troublesome to get in.

1739. Why is it troublesome to get in ?—Because it is not properly constructed, as we think, and too narrow.

1740. Do you mean with reference to the angle which it forms with the line of embankment ?—Yes.

1741. It is at right angles ?—Yes, so that there is no opportunity to get a barge in—when you get past one pier head she is against the other.

1742. The strong tide on the bow or the stern gives her a twist which damages her ?—Yes, and you cannot twist her in without a capstan to heave at occasionally.

1743. You think that if the dock entrance were made diagonally, or bell-mouthed, it would obviate that ?—Yes ; bell-mouthed.

1744. (*Captain Galton.*) If the coal merchants who possess wharves along this part of the Thames were compelled to move in consequence of the arrangements for making the embankment, I suppose that they would be able to carry on their business equally well on some other part of the river ?—Of course it would involve great expense.

1745. They would suffer the inconvenience of removal ?—Yes.

1746. (*Mr. Hunt.*) It would annihilate their business altogether ?—They would find other places ; those who have been turned out of Pimlico have found other places at Thames Bank.

1747. Mr. Cockerell for instance ?—Yes.

The witness withdrew.

Mr. Charles Hastings Collette examined.

Mr. C. H. Collette.

1748. (*Sir Joshua Jebb.*) Do you represent Mr. Gwynne?—I am his solicitor. He came here this morning out of respect to the Commissioners, but he was not able to wait; he wished me to say that he was very willing to answer any questions which might be put to him, but that he had no evidence to tender. He wished me also to state that he has a very large frontage ; and which he has obtained at a very great expense, this he considers to be the backbone of his business, and any interference with that frontage would materially injure him in more ways than one.

1749. (*Captain Galton.*) His business is merely that of a machine maker ?—He is an engineer. If you wish to ask Mr. Gwynne any questions he will be ready to attend and answer them.

The witness withdrew.

Mr. Francis William Beaumont, C.E., examined.

Mr. F. W. Beaumont.

1750. (*Sir Joshua Jebb.*) Will you describe your plan ?—I have a written statement of it, abridged from my articles in "The Engineer" newspaper, as much as I could abridge it.

(*The same was handed in, and is as follows:*)

"171, Manor Street, Clapham, S.,
17th May, 1861.

"I beg to hand in as succinct a description as possible of the design which I have the honour of submitting, for improving the general navigation of the Thames, and locally of getting rid of the eddies which cause miasmatic mud-banks in that part of the river channel immediately contiguous to some of the most important districts of the metropolis ; and also to afford relief to some of the most crowded thoroughfares, with other important advantages required, which probably I have sufficiently noticed in my letter to you dated 6th ult.

"By the accompanying drawing the Commissioners will see that I have adopted as my *first principle* that which Mr. Page originated and claims, viz., '*A road in the river,*' with a view of '*substituting the smallest amount possible of solid or stationary matter for tidal water in motion,*' because I hold that *the importance of maintaining and improving the Port of London is entirely paramount to every other consideration.*

"Any solid embankment between Westminster and Blackfriars Bridges *must injuriously diminish* the scouring power of the river *below London Bridge,* but this the present Commissioners already have before them in the first 'Report of the Commissioners for the Improvement of the Metropolis,' dated 27th January, 1844, and in the letters of Mr. Cattley, Mr. Page, and Captain Maughan to Lord Lincoln, which are appended to that report, and which, *pro tanto,* I would presume most cordially to endorse could I flatter myself that even after five-and-twenty years experience of currents, my humble opinion would carry any weight with the present Commission.

"I follow Mr. Page, however, no farther than the enunciation and application of this *first principle,* because both the sanitation of the locality and a proper maintenance of tide water call for the introduction of a *second principle,* which is 'that the side channel so created shall be kept entirely open throughout, so that a uniform current may be maintained through it *in the direction of the ebb tide only,*' which will not only effectually preclude the possibility of any stagnation or deposit ever taking place, but will establish a constant tendency in the current *to deepen the side channel.* I would accomplish this uniformity of current by having entrances to the side channel *at its extremities alone,* and closing that at Blackfriars Bridge against *the flood tide,* by two pairs of gates both opening outwards, so that barges could be locked through ; but during ebb both entrances would be wide open."

"Under such an arrangement it is obvious that no part of the roadway need be more than four or five feet above high water of spring tides, except at the ends where it would rise to Westminster and Blackfriars bridges, and at Whitehall and the Savoy, where there would be bridges over the side channel for vehicular traffic. I would have a neat, light, spiral iron staircase on each side of Hungerford and Waterloo Bridges ; but consider that making any other connection would only be wasting money on unsightly excrescences.

"I can see no reason why the residents in Privy Gardens should be annoyed with more than an esplanade for foot passengers in front of that locality, and have given plenty of cogent reasons against it which can be referred to.

"I do not as yet presume to trouble the Commissioners with drawings or specifications of mere details of construction, because it has appeared to me that these can be better decided on at a future time when the great principles on which the embankment shall be formed have been determined; which being still before the Commissioners I conceive myself at liberty to deal only with such points as,—whether or not the river shall be deprived of any amount of tide-water space ; whether or not the wharf accommodation shall be done away with, or left as at present, or formed into tanks for stagnating water ; whether or not the low-level sewer shall be permitted to shoal a large portion of the river; whether or not it is peremptory that a railway shall occupy part of it ; and, finally, what line shall the river face follow ; to

Mr. F. W. Beaumont.

4 June 1861.

what length shall the embankment be allowed to extend; what shall be its height above Trinity datum; and what shall be the public roadway accommodation derivable from it. I have, therefore, laid down two lines, either of which, or an intermediate one partly following both, would fully satisfy all the conditions which an embankment of the Thames ought to fulfil. The one coloured red approximates most nearly to the lines of river-front recommended by other engineers, but that in shadow would have the advantage of not only interfering less with the accommodation of the present wharf interests, but also of extending that so as to make the embankment, even as a public work, self paying and self supporting, and is that which I can most strongly recommend for reasons which I have not yet published, but am prepared with.

"The two first of the above principles I have already dealt with; and now as regards the position of the low-level sewer, I do not hesitate to say that it is perfectly absurd to assert that it cannot be carried along the open foreshore of the river "without a Thames embankment." It has as little business in a Thames embankment as in Fleet Street and the Strand. The great error in speaking or writing of the sewer has been the assuming a depth of water over it which can exist *only at the high water of spring tides*, which is as outrageous as it would be to propose regulating the power of the engines for any given railway by the easiest instead of the most severe gradient. Surely the smallest mental calibre can carry the fact, that the only depth which can absolutely be depended on *at all times* as a governing depth must be that of the lowest neaps, which would only be 5 feet 6 inches, a depth that most of the billy-boys and other barges of their class actually draw when full laden, without allowing for clearance or the heaving occasioned by a swell.

"The proper route for the sewer is, therefore, one following very nearly the fronts of the present wharves, let who may assert the contrary, and neither Mr. Page, myself, nor any other engineer capable of going beyond mere routine, would experience any difficulty in constructing it along such a route, *at a moderate cost and without a cofferdam.*

"The next point is as to a railway, which I am certain would lose half its utility if formed on an elevated viaduct, from being too high above the wharves, and for other reasons; but all the advantages of a railway might be obtained, *without creating a nuisance*, by adopting the very practical suggestion of Sir S. M. Peto, viz. a double tramway similar to those of Mr. Train, which might be laid on one side of the road, and on which railway carriages and trucks could be worked by horse-power without the slightest difficulty or inconvenience.

"The river-face of the embankment is shown by the accompanying plans, as is also its length. The evidence already before the Commissioners, I feel quite satisfied, is sufficient to establish the inexpediency of attempting to carry the embankment beyond Blackfriars Bridge; the length to which from Whitehall Place is as nearly as possible one mile, and the Esplanade up to Westminster Bridge would be three furlongs.

"The width of the road, as I have drawn it, is about 85 feet over all, and the Esplanade about 30 feet over all; as to both of which I need only say that a few feet more or less will make but a slight difference in the expense, as that can only affect the "filling-in,"—the material for which is on the spot. With the exception of the bridges and viaduct, as marked, the whole of the embankment must be solid, that is must not allow of the passage of river water through it.

"I may add that I am quite aware that the absence of innumerable openings through my embankment will be called an insuperable objection by a large majority of the wharfingers, although I know it will be found a very great advantage to them in practice, especially if the line in shadow be adopted, and that (as naïvely remarked by Mr. Page), "if they once have the embankment they will be loth to lose it or have it altered."

1751. Your plan consists generally of a line which comes up to the second arch of Waterloo Bridge?—I have laid down two lines. I consider that the plan rather represents a principle than absolute details to a few feet.

1752. Will you state anything which you wish to state in addition?—The only point which is very material is that the adoption of that plan would not tie up the current and navigation of the river in the same way as the adoption of any other plan would. If that plan were carried out you would be able to proceed cautiously, and try the result, either, as I have proposed it with a continuous current in the side channel; or by leaving the gates open below, and allowing the tide to flow and ebb through that, or by shutting both entrances, which would be tantamount to forming a solid embankment, by filling it.

1753. What are the levels of your road?—At the extreme ends it would come up to Westminster Bridge and Blackfriars Bridge, but along the interval it would only be four or five feet above high-water spring tides.

1754. You would drop down to a low level?—Yes, and keep to that level. It would not disfigure the river in any way.

1755. There is another point in which your plan differs from others—you do not carry the traffic line along the front of the Crown property?—I do not; neither does Mr. Page.

1756. From the level of Westminster Bridge to Whitehall Place you only propose that for foot passengers?—Yes.

1757. You turn up into Whitehall Place with your road?—Yes, because it would make no difference in distance, and there is plenty of room, more especially as when the block of buildings on the west side of Parliament Street comes to be altered and improved any additional space can be given.

1758. Do you not think that it would increase the traffic materially in Parliament Street from the Victoria Station and other places?—It might; but then the question is whether that could not be better accommodated there than in Bridge Street, Westminster; the other proposal would almost destroy the Crown property altogether by Richmond Terrace and Privy Gardens and so on. I do not think it would inconvenience Parliament Street at all.

1759. You would have tidalgates at Blackfriars Bridge?—Yes, self-acting gates; as soon as the tide turns the gates open.

1760. (*Mr. Hunt.*) Those are the only gates which you would have?—Yes.

1761. (*Captain Galton.*) Do you prefer this alternative line to the other line?—Yes; because it would give more room inside.

1762. You do not think that it would interfere with the river too much?—No.

1763. You take three arches at Waterloo Bridge?—I take two and a portion of the third.

1764. (*Captain Burstal.*) What do you do with the last quarter of the arch?—There would be enough for many vessels to pass through; it would leave 40 feet.

1765. (*Mr. Hunt.*) What is the width of your road?—85 feet I have laid it down, but it might be varied.

1766. (*Sir Joshua Jebb.*) What is your gradient from Whitehall Place?—That would be a bridge, it would be quite easy, perhaps 1 in 40 or 1 in 50. I have only one or two other points to mention. I heard Mr. Hunt this morning asking several witnesses with regard to having to send coals farther than from the present wharves. One of the great objects of the embankment is to ease the crowding of the thoroughfares, and if there be a mile further of distance to send coals, (suppose you have five miles to send instead of four miles), you have an increase of 25 per cent. in the number of vehicles in the streets in consequence,

to do the same trade. If you make a solid embankment, and destroy the whole of the wharfage, you must *pro tanto* increase the crowding of the thoroughfares. I would also observe, that placing the low level sewer in the embankment would have the effect of lessening the tidal flow through London Bridge by 10,000,000 of cubic feet. I may state finally that I estimate that the cost of executing my plan would not exceed 300,000*l*., exclusive of that for dredging, which would of course be proportional to the quantity excavated; and that I propose to excavate a considerable width of the side channel to a convenient depth below low water mark, say from 3 to 5 feet.

Mr. F. W. Beaumont, C.E.
4 June 1861.

The witness withdrew.

Mr. GEORGE THOMAS ELLISON examined.

Mr. G. T. Ellison.

1767. (*Sir Joshua Jebb.*) You represent the Grand Junction and Castle Baynard Wharves?—Yes.

1768. Have you formed any idea as to what plan of embankment would inflict the least injury upon those wharves?—After conversing with Mr. Harvey and two or three other wharf owners, I should say that a plan extending the wharves down to the outer edge of the proposed roadway, and carrying that roadway at a high level on iron pillars so as to give free access beneath the road to the water, seems to be the only plan which will not ruinously affect the trade.

1769. You would state that a high level road giving headway for the purpose of access to the water beneath would be the least possible interference with the trade?—Yes.

The witness withdrew.

Adjourned to to-morrow at 2 o'clock.

Monday, 10th June, 1861.

PRESENT:

The Right. Hon. The LORD MAYOR.
Major-Gen. Sir JOSHUA JEBB, K.C.B.
Captain D. GALTON, R.E.
Captain BURSTAL, R.N.
HENRY ARTHUR HUNT, Esq.

The Rt. Hon. the LORD MAYOR in the Chair.

Sir RICHARD MAYNE, K.C.B., called in, and examined.

Sir. R. Mayne, K.C.B.
10 June 1861.

1770. (*Chairman.*) You have been invited to give us some information as to the present condition of the traffic about Charing Cross and Westminster?—Charing Cross, Parliament Street, and Bridge Street form a line of peculiar importance, more especially during the session of Parliament. Strict orders are issued from both the House of Commons and the House of Lords to keep the access clear during the session of Parliament.

1771. You state that that applies to the line from Charing Cross to Bridge Street?—The precept is "the streets leading to" the Houses of Parliament. The great point of difficulty is at the head of Whitehall, running up to the statue. The two narrowest parts, and therefore those which cause the greatest difficulty, are from Scotland Yard to Charing Cross up to the statue, communicating, on the one hand, with the Strand, and on the other with Cockspur Street.

1772. That is the statue of King Charles?—The statue of King Charles the First; and at this lower end.

1773. That is towards the Houses of Parliament and Westminster Bridge?—The whole of Parliament Street down to the end of Bridge Street. There are constables constantly kept there for the purpose of preventing obstructions, regulating the traffic, making it fall into lines at both those points, and also constantly stopping the traffic turning into Bridge Street, to enable Members of Parliament and other persons on business going to the House to cross safely.

1774. Then you state there is a vast amount of traffic at the east end of Parliament Street?—Yes.

1775. And, in your opinion, it is desirable that something should be done to ameliorate that condition of things?—It is very important for the public convenience and safety. I have often had representations made to me that persons are in danger in crossing at the end of Bridge Street when there did not happen to be placed at the moment constables to stop the traffic, which they do every few moments. I have a a return here which, so far as it goes, will show the amount of traffic at that point. I desired it to be taken on Friday and Saturday last. It shows the number of carriages of different sorts which passed up and down from 3 p.m. to 8 p.m., on Friday the 7th and Saturday the 8th instant.

The witness delivered in the same, which is as follows:—

"A. OR WHITEHALL DIVISION OF METROPOLITAN POLICE.

"RETURN of Carriage Traffic in Charing Cross during stated hours on 7th and 8th June, 1861.

Friday, 7th June—3 P.M. *to* 8 P.M.

Description of Carriage.	Passing	Number passing from 3 to 4 P.M.	4 to 5 P.M.	5 to 6 P.M.	6 to 7 P.M.	7 to 8 P.M.	Total Number passing during Five Hours.
Omnibuses	East side of statue	69	80	81	78	71	379
	West do.	32	31	35	37	34	169
	Total	101	111	116	115	105	548
Cabs	East side of statue	257	253	188	149	97	943
	West do.	278	272	237	248	270	1,305
	Total	535	525	425	396	367	2,248
Private Vehicles	East side of statue	107	108	68	54	34	371
	West do.	221	237	198	121	82	859
	Total	328	345	266	175	116	1,230
Carts and Waggons	East side of statue	199	231	244	192	142	1,008
	West do.	152	169	146	138	96	701
	Total	351	400	390	330	238	1,709
Total number passing east side of statue		632	672	581	472	344	2,701
Do. west do.		683	709	616	544	482	3,034
Grand Total		1,315	1,381	1,197	1,016	826	5,735

Sir R. Mayne, K.C.B.

10 June 1861.

Saturday, 8th June—10 A.M. *to* 4 P.M.

Description of Carriage.	Passing	Number passing from 10 to 11 A.M.	11 to 12 A.M.	12 to 1 P.M.	1 to 2 P.M.	2 to 3 P.M.	3 to 4 P.M.	Total Number passing in the Six Hours
Omnibuses	East side of statue	79	72	79	73	69	78	450
	West do.	33	32	34	27	29	29	184
	Total	112	104	113	100	98	107	634
Cabs	East side of statue	155	193	213	181	194	170	1,106
	West do.	202	310	251	220	237	234	1,454
	Total	357	503	464	401	431	404	2,560
Private Vehicles	East side of statue	48	88	57	63	78	87	421
	West do.	67	89	130	84	117	170	657
	Total	115	177	187	147	195	257	1,078
Carts and Waggons	East side of statue	255	249	255	192	232	229	1,412
	West do.	163	165	161	186	141	137	953
	Total	418	414	416	378	373	366	2,365
Total Number passing	east side of statue	537	602	604	509	573	564	3,389
	Do. west do.	465	596	576	517	524	570	3,248
	Grand Total	1,002	1,198	1,180	1,026	1,097	1,134	6,637

" King Street Police Station,
10th June, 1861."

1776. (*Sir Joshua Jebb.*) Has any specific plan occurred to you with regard to the best means of diverting this traffic and ameliorating the condition of the streets?—I have always thought since I first heard it spoken of, that this embankment, if it can be properly carried out, will be a very valuable addition to the thoroughfare.

1777. You are aware that a large proportion of the traffic which comes down from Charing Cross in the the direction of Westminster Bridge goes over the bridge into Lambeth, and therefore unless Parliament Street and Charing Cross were greatly widened, the inconvenience would probably not be lessened by the construction of the embankment?—A very considerable proportion, especially in the session of Parliament, of the traffic goes down to the Houses and to Abingdon Street.

1778. That proportion would not be relieved at all by the new embankment?—If there was an access to the embankment at Charing Cross, which would come down and approach Westminster Bridge, that would relieve the traffic which now passes through Charing Cross and Parliament Street.

1779. That would involve the necessity of a carriage way on along the front of the Crown property to Westminster Bridge?—From the embankment?

1780. From the embankment leading from Charing Cross?—Somewhere about Westminster Bridge.

1781. Has it ever occurred to you that there might be an advantage in having a bridge in connexion with Charing Cross for crossing the river into Lambeth?—That was proposed some years ago when there was a discussion as to where the site of Westminster Bridge should be. That would give a considerable advantage to the traffic. The traffic which now comes down merely for the purpose of crossing Westminster Bridge of course would cross over at Charing Cross. With regard to the general advantages of a long line of that sort, such as the proposed embankment, unless there were several modes of getting upon it, I think the advantages would be comparatively small. There are very few persons who would wish to go the whole way from Westminster Bridge up to Blackfriars Bridge; but if you had various points to enter it I think such a plan would present advantages. There ought to be an access at various points, and those points would be obvious to any engineer who observes the traffic. Anybody would be as competent to form an opinion upon that as I am.

1782. One objection to some of the streets would be the difference of level?—Those are points which I am not competent to speak to.

1783. On Mr. Sheild's plan there are a series of communications; that yellow line (*referring to the plan*) is supposed to be the line of road. The yellow streets going off are those which communicate with the Strand; that is the mode of communication you are speaking of?—Yes; that would be very important.

1784. Would that give sufficient communications? The communications marked upon that plan are Blackfriars Bridge, Middle Temple Lane, Essex Street, Arundel Street, and some others. Essex Street and Middle Temple Lane are very near together.

1785. There are three streets between the Temple and Somerset House; do you think Waterloo Bridge is an important point of communication?—Waterloo Bridge I should think would be a very important one with reference to the traffic coming from the Waterloo Station; for instance, the traffic coming from Waterloo Station, instead of going down the Strand, should turn off at Waterloo Bridge. I am not speaking of any engineering difficulties, but mainly with reference to the run of traffic.

1786. (*Captain Burstal.*) You think when they crossed Waterloo Bridge, and got on the Middlesex shore, that by being enabled to get down by a main roadway the embankment would be very desirable?—I should think it very desirable.

1787. To go either to the left or to the right?—To the left or to the right, and especially on account of people coming from the railway station.

1788. And the same line for passengers who wanted to come from the Strand?—Yes.

1789. Now with regard to a question which is of very great importance, as to coming on this embankment. It is quite clear that if carriages come from Victoria Street down to this end of Westminster Bridge, a great number of carriages will congregate at this end of Westminster Bridge. Do you anticipate that there will be a large amount of traffic and a great many carriages that will meet together to go on to the embankment at this side of Westminster Bridge?—Is it proposed that the approach to the embankment should be through Bridge Street?

1790. Supposing the approach to the embankment was to be through Bridge Street, the same as Bridge Street is now, across the bridge and turning to the left, and supposing the embankment to be so made that there is a roadway upon it, what do you think would be the effect of the traffic if the carriages were induced to come on to the embankment by that route being the nearest?—If Bridge Street were to remain of its present width, it would become completely blocked; but I believe it is intended greatly to widen Bridge Street, even without reference to the embankment, making it the whole width of the proposed Westminster Bridge. I believe that is intended.

1791. Supposing the embankment terminated at Whitehall Gardens, and the traffic came down Victoria Street one way, Birdcage Walk another, then through King Street and Parliament Street and on by Scotland Yard, what would be the effect on the traffic?—I think it of very great importance, I may say primary importance, to relieve Parliament Street and King Street. They are quite inadequate even for the present amount of traffic, so that if you add to that the traffic coming to the embankment, a considerable portion of which now goes over Westminster Bridge, the present inconvenience would be increased.

1792. So that you think an approach to the embankment by Westminster Bridge would split the traffic and relieve Parliament Street?—Greatly; and without any disadvantage, if Parliament Street be made wide enough for the purpose.

1793. Do you think that could be effected by that block of buildings on the west side of Parliament Street being pulled down, and the street made as wide as it is opposite the Board of Trade?—I think that would be adequate. It is of great importance with regard to any new line of that kind, especially where people would not go for the ordinary

purpose of setting down upon the line, that there should be a power given, say to the police authorities, to direct a certain part of the traffic to go by that line.

1794. Is it your opinion that a public road in front of the Duke of Buccleuch's mansion would be a relief to the traffic at this end of the town?—I think very great, and not only at this end of the town, but the whole of Belgravia. Everybody coming from Belgrave Square, Eaton Square, and all that district, to the city, passing through Birdcage Walk and Great George Street, or through Victoria Street, and up Parliament Street, if there were a good road by an embankment instead of going up Parliament Street, for the purpose of getting to the city, would go along that embankment.

1795. Supposing the block of buildings on the west side of Parliament Street to remain, and King Street to be very much widened, say to three times its present width, would not that afford very great relief?—No doubt; but that would be extremely difficult to effect. I am interested in that; inasmuch as there is a police station there, which I should be very sorry to see pulled down. A large sum of money has been laid out on that. A great many men reside there, besides there being accommodation for horses.

1796. Is that on the west side of King Street?—On that side nearest the park; upwards of 10,000*l.* has been laid out on it. I should be very sorry to see it pulled down.

1797. (*Chairman.*) Looking at the map I suppose you would say that nothing could be done there, except pulling down that block which lies between Parliament Street and King Street? You could not widen Parliament Street to any extent, and yet leave up part of that block?—No, I should think not. That would make it of the same width as the part above it.

1798. The Government Offices are about to be built in Downing Street, and will have a frontage towards the upper part of King Street, so that it is quite obvious that the line which lies between the broad part of Parliament Street and Charles Street must come down?—I have very often wished that it was down.

1799. But still there would be the difficulty to encounter of the narrow part which lies between Charles Street and Great George Street?—Yes, that is utterly inadequate at present; I very often pass that way myself, and hardly ever without interruption, therefore, I speak from personal experience.

1800. (*Sir Joshua Jebb.*) Then the part which I think you designated as "the throat" at Charing Cross is the narrowest part?—That is one of the most important parts to relieve, because the whole of the traffic that comes from Whitehall, and also from the various lines, such as Cockspur Street, the Strand, St. Martin's Lane, and the other side of Trafalgar Square, near the Union Club, all come into that very narrow line which very soon becomes throttled, if I may use that expression; it makes a complete block.

1801. That is from opposite Drummond's Bank down to Scotland Yard?—From the end of Spring Gardens just to the point at Drummond's Bank down to the Admiralty.

1802. (*Chairman.*) That, in fact, in your opinion, of all the traffic throughout the Metropolitan district is the traffic which is the most difficult to manage?—It is peculiarly difficult, more especially on account of its being the access to the two Houses of Parliament. Members are very impatient at any interruption.

1803. There is no other spot in the Metropolitan district where the crowding of traffic is so difficult to control as this?—I think it is quite as difficult as anywhere else, that is from the corner of Drummond's Bank down to the Admiralty.

1804. (*Sir Joshua Jebb.*) That just brings it into the archway at Scotland Yard?—Yes; these little bits between Drummond's Bank and the Admiralty, and Parliament Street, or King Street, are the points that require the greatest relief.

1805. If in making a new embankment access could be obtained to the new embankment from Bridge Street that probably would in a great degree relieve the pressure in Parliament Street, would it not?—Certainly it would to a very considerable degree.

1806. But if access were obtained to the new embankment anywhere between Bridge Street and Scotland Yard, it would then be absolutely necessary to widen Parliament Street?—Yes, but in order to make the relief most effectual there, it would be very desirable that there should be an exit as well as a mode of getting upon it at Charing Cross, or the top of the Strand. A great many vehicles, instead of passing up Parliament Street and Whitehall to Charing Cross, would go along Bridge Street on to this embankment, going northwards or westwards of Charing Cross.

1807. Putting aside the question of public or private interests, would you advise getting on to the embankment near to Westminster Bridge, or would you advise getting on to the embankment in the neighbourhood of Whitehall Place?—I think it would be very important that there should be an approach to it at Westminster Bridge, but I think the other would be perhaps as great in effecting the whole object.

1808. (*Mr. Hunt.*) You mean in addition?—Yes; both are of the greatest importance; if persons were required to go the whole line from Bridge Street to Blackfriars very few indeed would use it.

1809. (*Captain Galton.*) But assuming there are a certain number of approaches from different parts of Fleet Street, the Strand, and Charing Cross, you still think that it should end at Westminster Bridge on the western side?—I think it very important that the traffic which comes from Abingdon Street, Millbank, Victoria Street, and Birdcage Walk, which all converges there, should go upon the line at Westminster Bridge, because otherwise it must be turned up Parliament Street.

1810. (*Chairman.*) Supposing that the block of buildings between Charles Street and Great George Street were taken down, and also the block of buildings between Charles Street and Whitehall, would you still think it desirable to get on the embankment at Westminster Bridge?—Yes; simply for the relief of the upper part of Charing Cross, for traffic going towards Waterloo Bridge, the City, and the Strand.

1811. What I meant was, that if those two blocks of buildings were taken down, and the traffic was to get on to the embankment at Whitehall Place, or by a diagonal line before reaching Whitehall Place, so as to leave all the upper part of the embankment, that is between Whitehall Place and Westminster Bridge, undisturbed, would the public convenience be as well provided for by that as by getting on to the embankment at Westminster Bridge?—I think not as well; it would be a great relief. I have a return of the carriage traffic of Parliament Street and Bridge Street during five hours taken on the 7th and 8th of June.

The witness handed in the same which is as follows:—

"A. or Whitehall Division of Metropolitan Police.

"Return of Carriage Traffic in Parliament Street and Bridge Street, Westminster, during stated hours on 7th and 8th June 1861.

Parliament Street.

Friday 7th June, 1861.

Description of Carriages.	Numbers passing from					Total Numbers passing during five hours.
	3 to 4 P.M.	4 to 5 P.M.	5 to 6 P.M.	6 to 7 P.M.	7 to 8 P.M.	
Omnibuses - -	98	91	109	99	97	494
Cabs - - -	354	407	305	289	291	1,626
Private Vehicles -	195	203	209	135	109	851
Carts and Waggons	245	218	259	219	156	1,097
Total -	872	919	882	740	653	4,068

Sir R. Mayne, K.C.B.

10 June 1861.

Saturday 8th June, 1861.

Description of Carriages.	Numbers passing from 10 to 11 A.M.	11 to 12 A.M.	12 to 1 P.M.	1 to 2 P.M.	2 to 3 P.M.	3 to 4 P.M.	Total Numbers passing during six hours.
Omnibuses - -	103	100	98	92	89	92	574
Cabs - - -	223	275	248	227	270	261	1,504
Private Vehicles -	91	103	127	103	122	151	679
Carts and Waggons	259	263	242	239	191	201	1,395
Total -	676	741	715	661	672	705	4,170

Bridge Street.

Friday 7th June, 1861.

Description of Carriages.	Numbers passing from 3 to 4 P.M	4 to 5 P.M.	5 to 6 P.M.	6 to 7 P.M.	7 to 8 P.M.	Total Numbers passing during five hours.
Omnibuses - -	40	41	52	50	46	229
Cabs - - -	170	168	205	183	147	873
Private Vehicles -	120	104	96	84	75	479
Carts and Waggons	264	287	306	247	188	1,292
Total -	594	600	659	564	456	2,873

Saturday 8th June, 1861.

Description of Carriages.	Numbers passing from 10 to 11 A.M.	11 to 12 A.M.	12 to 1 P.M.	1 to 2 P.M.	2 to 3 P.M.	3 to 4 P.M.	Total Numbers passing during six hours.
Omnibuses - -	45	48	43	40	43	42	261
Cabs - - -	239	271	213	162	213	227	1,325
Private Vehicles -	93	115	113	92	153	124	690
Carts and Waggons	231	318	333	304	311	346	1,843
Total -	608	752	702	598	720	739	4,119

"King Street Police Station,
10th June 1861."

1812. (*Sir Joshua Jebb.*) Assuming that there was a difficulty in effecting all the objects, and first of all, in obtaining access from Whitehall Place to the new embankment, what, in your judgment, would be the best point on which to get to the embankment, with a view to relieve the traffic both of Charing Cross and Parliament Street? I would put it in the alternative: Supposing Whitehall Place to be one point, and another point to be between Scotland Yard and opposite Drummond's Bank, which do you think would be the most convenient point for the traffic coming from the north and from the south to get on to the embankment?—There are two lines of traffic to consider there. If you take it at Parliament Street south of Charing Cross you save the traffic from Bridge Street going up into the narrow part of Charing Cross. On the other hand you bring the traffic from the north and west down, so that upon consideration I am inclined to think that it would be more convenient somewhere about Hungerford Bridge before the narrow part of the street was entered, say that line which is carried out from Duncannon Street, along the front of the National Gallery, where those two lines converge into the Strand, that is, the line from Charing Cross and the line from Pall Mall East.

1813. Assuming that a communication was made with the embankment direct from Charing Cross, say between Scotland Yard and the first point where it begins to narrow, would not that be a more essential point taking both the north and south traffic?—For that you require all the traffic from the north and west to pass down the narrow part of Charing Cross.

1814. I am assuming that that part should be widened; if the part which is now so very narrow, and which you have described as being so extremely inconvenient between Charing Cross and the Admiralty were widened, and other communications made from Cockspur Street down to the river, would not that meet the convenience of the north and south traffic better than going down either of the others?—If you widen the approach at Charing Cross, I think it would. Any arrangement that would bring the west traffic down the narrow part would perhaps aggravate the evil, because many carriages would come there expressly for the purpose of getting on to the embankment.

1815. (*Chairman.*) Do you understand Sir Joshua Jebb's question to refer to traffic going to the city?—I think if you made that part wider by taking down and removing houses on the east side, that that would be the most convenient part, because carriages coming from Cockspur Street would go straight.

1816. You have suggested a new street?—Yes, that is suggesting a new street, and a widening of Charing Cross.

1817. It seems to me that that new street which would let you proceed direct on to the embankment would lessen the necessity of widening?—It would bring all the traffic from this part up through the narrow part still. All the traffic which comes through Bridge Street, Victoria Street, and Birdcage Walk would be drawn through the narrow part of Charing Cross.

1818. (*Sir Joshua Jebb.*) The meaning of my question was, assuming there were two communications required, one for the north traffic to get on at Whitehall Place, and another for the south traffic, to get on as you suggest, whether it would not be better to combine those two, and have one communication in the centre?—I think it would, if you widen that narrow part of Charing Cross. You assumed that there was to be a line between Westminster Bridge and Charing Cross.

1819. Yes.—The great advantage of the embankment will depend, think, on the number of accesses and outlets from it, but very few persons comparatively will wish to go the whole length.

1820. You think Waterloo Bridge is one point?—I think that very important. A great deal of traffic comes down Bow Street from the northern stations; a great deal of traffic comes from the Waterloo Station, and a great deal also comes from the London Bridge Station. The Victoria Station, as it comes more into use, will no doubt add greatly to it.

The witness withdrew.

Monday, 17th June 1861.

Present:

The Right Hon. the Lord Mayor.
Major-General Sir Joshua Jebb, K.C.B.
Captain D. Galton, R.E.
Captain Burstal, R.N.
Henry Arthur Hunt, Esq.
John Robinson McClean, Esq.

The Right Honourable the Lord Mayor in the Chair.

Mr. J. Cubitt.

17 June 1861.

Mr. Joseph Cubitt examined.

1821. (*Chairman.*) The Commissioners were very desirous of seeing you this morning because it is very important that you should know where our embankment terminates. We have discussed the matter, and we have come to the conclusion that the outer edge of our embankment is to be 130 feet from the face of the existing north abutment at Blackfriars Bridge. The Bridge House Estates Committee are having designs made for New Blackfriars Bridge by seven or eight engineers. We shall have to inform that committee of the determination we have come to as to the point at which the edge of our embankment

Mr. J. Cubitt.
17 June 1861.

will have to come, in order that the committee may inform all the engineers who have prepared designs for the bridge of that fact. As regards the Railway bridge we, probably, have nothing to do with it?—I keep that question rather open until some decision is come to about the old bridge.

1822. Are you preparing designs for Blackfriars Bridge?—Yes, I am.

1823. It is very desirable you should know so that you may inform the committee, in order that they may inform all the other engineers of that fact?—Quite so.

1824. Then with regard to the level at which we should join, we, of course, must be governed by whatever level the new Blackfriars Bridge will be on at that point. Although we cannot decide our level, no doubt we can tell pretty nearly what it will be, and in designing the new Blackfriars Bridge, all the various engineers need to know of us is the point of distance?—That is one point which is absolutely required.

1825. I think that is all that we have to say to you on the subject, and we shall be glad to hear any suggestions that you may have to offer?—That is one point which it is essential we should know. I am much obliged to your Lordship for informing me, and I do not know that I have any suggestion to offer.

The witness withdrew.

Mr. J. Hawkshaw.

Mr. JOHN HAWKSHAW examined.

1826. (*Chairman.*) I believe you are building the Railway bridge at Hungerford?—Yes.

1827. We wish to show you whereabouts our line of embankment will come there, and to ask if you have anything to suggest as to any appropriation of land about there which will necessarily be enclosed. I may inform you that the present notion of the Commissioners is to expand all the water there, and to make the embankment solid its whole width out into the river as far as the pier of the existing Hungerford Bridge; there would be at that point, possibly, between that pier and the general line of shore something like 400 feet?—I think about 320 feet.

1828. We thought probably you might have something to suggest about the land; but, whether you have or not, we think it very desirable you should know what we are doing, in order that you may take it into consideration as to laying out your station, or anything else that you might have to do in connection with your works. We thought you would like to know what we propose with regard to the embankment, and if you have now, or at any future time, any suggestion to make we shall be very glad to hear it. We propose to make our road one dead level all the way from Westminster to Blackfriars, except the approaches, of about four feet above Trinity high-water mark. We should start at Westminster Bridge with a descent, and go down a gradient of 1 in 80; and we should go along that level until we come within such a distance of Blackfriars Bridge as would enable us to get up on a gradient of 1 in 80; all the rest would be a dead level?—I have been acting on the supposition that you would extend the embankment to *that* pier (*referring to the plan*), and I divide the space that would be embanked (*pointing to it*), into three openings of 100 feet each. It would be of considerable assistance to me if the embankment could be made simultaneously with the bridge, because I should treat it in a very different way. I am afraid of constructing a bridge which will be affected by an embankment which may not be made for a long time. Supposing I could make certain that this water space would become land, I could adopt a very different mode of construction.

1829. I think you may make certain that our Report will recommend that?—The question is how long it will be before the road can be carried out; I am afraid I must treat it as if it were water, and leave it so. There is no doubt it would assist me very much if the Thames embankment could be proceeded with simultaneously with the Railway bridge

1830. (*Sir Joshua Jebb.*) You give 100 feet clear?—Yes. I wish to point out that, supposing you make your road rise in this way at the end of the Blackfriars Bridge (*describing it*), you bring all this traffic on to this portion of the work (*referring to the plan*), where it will be an incline; and I do not think you will be able to make it look well. I think the embankment should be made of one uniform level, and you will then get from *here* to the foot of the bridge approach quite easily (*referring to the plan*).

1831. Would you not have to get up an incline of 1 in 80 at that point?—You will get a very good road there (*referring to the map*). I have not taken the gas works into consideration.

1832. (*Chairman.*) Are we not rather inclined to adopt a standard and notion of beauty which has grown out of the circumstances of other times; should we not rather now consider whether we cannot adopt the principle and form which will give the greatest possible use of the elements which have lately been discovered?—Yes; but I do not think you can by any change of process make that arrangement symmetrical.

1833. Could you not give some sort of beauty to an inclined plane; would it not be possible so to decorate the top of a spandril, the line of an inclined plane, or the string of a staircase, which would satisfy the eye as well as effect great utility?—As regards utility, I think it would be a better thing to do it the other way than in this way (*describing it on the plan*). You would not bring the stream of traffic so immediately on to the end of the bridge.

1834. Do you think anybody would go over Blackfriars Bridge and turn to the left to go to Westminster?—If not, there would appear to be less reason for making the junction *there* rather than *here*. I should not have ventured to make these observations had I not already felt the difficulty of dealing with this question.

1835. Sir Joshua Jebb suggested that you might make 10 or 20 yards of level road at the junction of the bridge, and that would get rid of one of the difficulties which occurred to his mind, of a slope joining on a slope at right angles?—That approach to Blackfriars Bridge is not easily managed; you cannot alter it very much, unless you are prepared to raise the road a long way towards Farringdon Street.

1836. Have you made up you mind as to what should be the head-way of your arch?—Twenty-five feet.

1837. Must it be as much as that?—I am afraid so; I do not think the Admiralty would agree to less. I think 25 feet is enough.

1838. They agreed to less with regard to Westminster Bridge?—I had something to do with that; there was a contest about it.

1839. If it is a fact now existing with regard to Westminster Bridge, of a certain height, is there any great reason for making Blackfriars Bridge much higher?—Westminster Bridge is higher up the river. I proposed a bridge with a head-way of 25 feet below Southwark Bridge, and the Conservators of the Thames insisted on making it 27 feet.

1840. (*Captain Burstal.*) They pressed you to make it 27 feet at the railway bridge?—I thought that was two feet too much.

1841. (*Chairman.*) The extra height of arch of Blackfriars Bridge over Westminster Bridge would not be of much use, because there would be no traffic of any amount going under Blackfriars Bridge that

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would stop between that and Westminster Bridge?—It would suit my views much better to have it low. I am only looking to the probability of what will be got from the Admiralty and the Conservators. It certainly need not be higher than 25 feet, but whether you will be able to get it down as low as 22 feet remains to be seen.

1842. Will not your bridge be as wide as the existing bridge?—You must look upon the bridge as the point at which the traffic will be concentrated, and therefore every year it will get worse.

1843. I am afraid the enormous amount of traffic carried on below bridge would involve us in difficulty of a pecuniary nature, which we hardly dare to grapple with?—Supposing that you were to say this is too costly a thing to be done now; the question is, whether you ought to arrange your plan so as to render it impossible to be done hereafter. I have always found in any design I have had to make, that if I did not look forward 20 or 30 years I should very probably go wrong.

1844. We feel that there is an absolute necessity for getting on to our embankment from Bridge Street, and we have studied the thing on the spot, with reference to what you have suggested, as to the possibility of getting a way through into Bridge Street rather than getting on to the bridge, but we have been deterred by the expense?—The only question I am submitting to you is whether you should now so arrange the works that nobody ever afterwards could get under that end of the bridge.

1845. How will it affect it?—It is quite practicable; I shall certainly arrange my bridge so that I can get a road underneath it.

1846. (*Captain Burstal.*) That may be done on piers?—That is quite practicable. There is no difficulty I see about it, except this question of barges. I should have thought five feet above high-water would be quite sufficient head-way for the coal barges going to the Gasworks.

1847. A large sized barge is seven feet?—You mean on the top of high water.

1848. Yes?—You would be able to excavate the channel so as not to have to pass at the top of high water.

1849. But if they came too late to go through the head-way, they would have to wait till the tide fell?—Yes.

1850. There is a good deal of trade here carried on in barges with masts?—Of course that would be another question.

1851. (*Captain Galton.*) Would not making the junction here (*referring to the plan*) give just as great a facility to the traffic?—My notion would be to bring that road so that you can get first of all a complete level line along the margin of the Thames, on which you might make a handsome street, in that way (*describing*) if you liked.

1852. (*Chairman.*) Have you any other suggestion to offer?—I do not know that I have anything more to offer.

The witness withdrew.

Mr. P. Nelson.

Mr. Park Nelson, further examined.

1853. (*Chairman.*) I believe you attend from the Middle Temple?—Yes, my Lord. The Benchers of the Middle Temple desire me to express their views in the following language:—

"By order of a parliament of the Honorable Society of the Middle Temple, holden on the 12th June 1861, Mr. Park Nelson, the solicitor of the society, was directed to submit to the Thames Embankment Commission the views of the society to the following effect:—

"1. That the construction and maintenance of a public thoroughfare along the north shore of the river Thames, passing from east to west in front of the property of the Society of the Middle Temple, in whatever way it may be carried out, will most injuriously affect the property of the society.

"2. That if hereafter Parliament should sanction any such scheme, the least objectionable mode of carrying it out, so far as the interests of the society are concerned, would be constructing the road on the lowest possible level and at the greatest possible distance from the present river frontage.

"3. That the combination of a railway with the road would greatly tend to increase the injury to and depreciation of the property of the society.

"4. That should the scheme ultimately adopted be such as to leave any space between the present river wall of the Middle Temple gardens and the proposed new road, that such space should not be appropriated to docks or any other public purpose, but should be filled in and dealt with as the exclusive property of the said society in the manner most advantageous to its interests."

1854. (*Chairman.*) I think it may be stated to you that we are likely to recommend that the outer edge of the embankment shall be between 200 and 300 feet from the Temple frontage; that the roadway will be feet 100; that the ground between the roadway and the Temple Gardens will be filled up solid, so as to exclude the water, and that there will not be a railway. I think I ought further to say this to you, that in order to get up to the level of Blackfriars Bridge we shall begin to rise from the general level before we get clear of the Inner Temple Gardens; and then we entirely comply with your second proposition; with regard to the Middle Temple it will be as low as the flow of the tide will justify.

The witness withdrew.

Mr. C.H. Chilton.

Mr. Henry Charles Chilton, examined.

1855. (*Chairman.*) I believe you appear for the Inner Temple?—I represent the Inner Temple. The subject of the Thames embankment has been referred to a committee of the Inner Temple which has sat from time to time I have communicated with the committee since I was last here, and I have some resolutions from them which, with your permission, I will read. They are as follows:—

"Inner Temple.

"At a meeting of the committee appointed to consider and report from time to time to the bench upon the schemes before Parliament for the purpose of the Thames embankment, held the 11th day of June, 1861, it was resolved, that the solicitors of the society be instructed to submit to the Thames Embankment Commissioners the views of the committee, to the following effect,—

"1. That the construction and maintenance of a public thoroughfare along the north shore of the River Thames passing from east to west in front of the property of the society of the Inner Temple, in whatever way it may be carried out, will most injuriously affect the property of the society.

"2. That, if hereafter Parliament should sanction any such scheme, the least objectionable mode of carrying it out, so far as the interests of the society are concerned, would be by constructing the road on the lowest possible level and at the greatest possible distance from the present river frontage.

"3. That the combination of a railway with the road is unnecessary, not required by the public, and would greatly tend to increase the injury to, and depreciation of, the property of the society.

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"4. That should the scheme ultimately adopted be such as to leave any space between the present river wall of the Inner Temple garden and the proposed new road, such space should not be appropriated to docks or any other public purpose, but should be dealt with as the property of the society, in the manner most advantageous to its interests."

1856. That, in fact, is a copy of those which have been already read from the Middle Temple?—Very nearly so.

1857. Probably you heard the observation which I made to Mr. Nelson, and therefore I need not repeat them?—Yes.

1858. You are rather nearer to Blackfriars Bridge?—Yes.

1859. I think I ought to state to you that the probability is that the embankment will begin to rise before it leaves you; but looking to the thing at the spot it seemed to me that the ground might slope up, and that it would not interfere with the beauty of your gardens; and that in fact there would be no objection to it on your part?—I did not submit that to the committee, because you had not arrived at that conclusion. Could you tell me, with any idea of certainty, how far from the east end of our gardens it would begin to rise?

1860. That is a matter of detail which we have not quite defined?—Can you give me any idea; would it be 100 yards?

1861. No, not 100 yards; it might be 30 or 40 yards; but you must not understand that anything definite has been decided?—No; the committee felt that, and therefore they framed those resolutions in a general way.

1862. We must get up to the level of Blackfriars Bridge; we want to give all the head-way for the water that we possibly can to the Gasworks, and the wharves which are situated there, and therefore it is necessary to begin to ascend before we quit you?—I only asked the question, because the Benchers would wish to consider this matter rather attentively between this time and the time when any scheme is brought into Parliament.

The witness withdrew.

Mr. R. A. Gray.

MR. ROBERT ALEXANDER GRAY further examined.

1863. (*Chairman.*) You have been present and have heard the remarks made by Mr. Hawkshaw as to the great difficulty, in an engineering point of view, which he has suggested; do you think it possible that your company could, upon any consideration, be induced to consent to a sort of solid embankment and take your coals in by land?—I think it would be destructive to the company to do that.

1864. It is suggested that it is simply a question of the difference between the cost of coals by land and the cost of coals by water?—Coals would cost by land from 2*s.* 6*d.* to 3*s.* per ton, whereas their cost by water is only 6*d.*

1865. Supposing that could be met, is there any other objection?—I think that difficulty is almost insuperable. The large quantity of coals coming to and coke going away from the works would put the public to the greatest inconvenience that could be imagined, if they were sent by land.

1866. Can you give an idea of the number of tons of coals in a year that you get there?—I have come provided with all that information. The consumption will probably vary, and we expect it will be greater next year than it was last. The consumption of 1860 of coals was 51,583 tons, of which quantity 45,038 tons were taken from the barges into our retort house, and 6,545 tons put into the warehouses, making together the quantity I have stated.

1867. Then if it all came by land there would be rather more than 1,000 tons a week, supposing the supply to be regular and continuous all the year round?—That would be the average; but in the winter time it would be considerably more. It was from 1,500 to 2,000 tons last year; and we had the greatest difficulty in getting into our works 100 tons a day by land during the time that the water communication was stopped through the ice in the river.

1868. (*Captain Burstal.*) What is your consumption per day?—About 300 tons per day in the winter time.

1869. (*Sir Joshua Jebb.*) Would it be possible to unload the barges from the outside of the embankment by lifts and take them over the roadway?—I think I might easily suggest to you that we should be interfering with the traffic of the road very much.

1870. The coals might be lifted by steam lifts to a certain height and then run down into your works over the roadway?—If what his lordship suggested to me the last time I was here could be accomplished, we should be perfectly satisfied, namely, to have from the inner wall of the embankment and the outer wall of our gasworks 70 feet, that would be perfectly satisfactory to us.

1871. That creates all our difficulty?—I am afraid it does.

1872. You are quite right in saying if you had to deliver all your coals over the roadway to the gas works, that it might obstruct very much the traffic of the adjacent streets; but if you could unload the barges by means of a lift over the road, and then run the coals down into your works, all that obstruction would be avoided, and it would probably be done at a less expense?—I do not know that the thing is impracticable, but there are so many difficulties in the way that I could not conquer them. There would be difficulties of every description. In addition to the large quantity of coals we receive by water we remove our products (which are considerable) by barges.

1873. (*Captain Galton.*) I understood you to say on the former occasion that you would have great difficulty in unloading barges at all times of the tide against an embankment wall so far out in the river in consequence of the movement of steamers?—There would be difficulty in that respect, because you are aware that the steamers keep the water in a constant state of agitation. They would come up close to the embankment, and in many cases the barges would be swamped.

1874. (*Mr. McClean.*) If the coals were lifted by machinery that would not be the case?—But a large proportion of coke goes away from our works in barges.

1875. (*Mr. Hunt.*) The Chartered Gas Company's coals are all carted, are they not?—Yes; but that is attended with very great expense to them.

1876. Do they supply gas at the same price that you do?—No, they charge more.

1877. I thought there was an uniform charge?—No; they charge 4*s.* 6*d.* at the west end, but in the east they submit to the low price of 4*s.*

1878. (*Captain Galton.*) You heard Mr. Hawkshaw state that five feet would be enough head-way for a barge?—I very much question that; I think the crown of the arch should not be less than eight feet from high-water mark.

1879. You employ some barges with masts?—Not very often; we have some in that form; sometimes our goods come up in billy-boys

1880. (*Captain Burstal.*) Of course billy-boys would alter the case?—As we are now circumstanced, we get billy-boys alongside of our wall.

1881. But you are prepared to give up the use of billy-boys?—Quite so.

1882. When the masts of the barges are lowered, they will only necessitate a head-way of about 9 or 10 feet?—Exactly so.

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1883. (*Mr. Hunt.*) Do you know the arrangement that was made with the Equitable Company at Vauxhall, when that embankment was made ?—No.

1884. You do not know how they got their coals ?—No.

Mr. Millar (*the Secretary to the City Gas Company*).—They have got the wharfage uninterrupted. The Chartered Gas Company and the Equitable have still a length of wharfage outside the road.

1885. (*Mr. Hunt.*) The wharfage under the road ?—

Mr. Millar. The whole extent of the wharfage is not interfered with by any arrangement on the shore; they have the frontage of the river at both places.

1886. (*Mr. Hunt.*) Supposing you had the arrangement for conveying coals to what the Equitable have, would that meet your objects ?—

Mr. Millar. Then I apprehend the Chairman's difficulty will arise, that this embankment will narrow the river so much that barges would not ride so safely there as the barges of the Chartered Company or the Equitable do.

1887. *Mr. Hunt* (*to Mr. Gray*). The sailing barges take goods and a great many other things into the adjoining wharf?—Our boundary wall to the river extends 300 feet. We have a frontage to the river of 300 feet.

1888. (*Chairman.*) Then I think we understand from you, that what was suggested to you on the last occasion, if the Commissioners could get it carried out, would be satisfactory to you ?—Perfectly so.

1889. That is, a water-way of 70 feet with rises under the roadway ?—Inlets and outlets.

1890. But if, through some other difficulty, we should be constrained to make a solid embankment, then that would involve a great additional cost to you by obliging you to have all your coals carted ?—Then there is another injury we should be exposed to. We get a very good price for our coke, arising from the facility which the dealers have in taking it away in barges. If that facility is very much reduced, instead of the coke dealers coming to us they might go elsewhere, so that we should be injured in several ways.

1891. Have you any further suggestions to make to us ?—We should be very unwilling to throw any unnecessary impediment in the way of what we think a great public improvement. I am quite sure that utility will not be sacrificed to beauty.

The Witness withdrew.

Adjourned.

Monday, 24th June 1861.

PRESENT :

The Right Hon. the Lord Mayor.	Capt. D. Galton, R.E.
Major-Gen. Sir Joshua Jebb, K.C.B.	Capt. Burstal, R.N.
John Thwaites, Esq.	John Robinson M'Clean, Esq.

The Right Hon. the Lord Mayor in the Chair.

Sir Walter James, Bart., examined.

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1892. (*Capt. Galton.*) You appear as one of the lessees of the Crown property ?—Yes.

1893. We understand that you are desirous of making a statement to the Commissioners ?—Not particularly so ; but the Secretary of the Commission wrote to me to say that if I had anything to state the Commissioners would hear it. I answered that if I had been in town I would have come, and he sent me a second communication. The only remark that occurred to me, and which I was anxious to make to the Commission, was that the lessees of the Crown are kept in a state of considerable suspense on account of this proposed embankment, and that it is very desirable for their interests that whatever is done should be done quickly, for the construction of works of this magnitude and importance carried on immediately in front of our houses would of course be of considerable inconvenience during the time of their construction. That was the only remark that I wished to make.

1894. You wish that the Commissioners should come to a decision as soon as possible ?—Yes.

1895. But you do not desire to express any opinion as to the kind of embankment to be made in front of your house ?—I understand that the Crown lessees have placed their case in the hands of Mr. Norton, therefore I am quite ready to be bound by the opinion of that gentleman.

The witness withdrew.

Mr. James Pennethorne and Mr. Daniel Norton examined.

Mr. J. Pennethorne and Mr. D. Norton.

1896. (*Capt. Galton to Mr. Norton.*) You appear on behalf of the Crown lessees ?—I do.

1897. (*To Mr. Pennethorne.*) You appear on behalf of the Crown ?—I appear here on behalf of the Crown in consequence of a communication from the different Crown lessees. Upon receiving their letters from the Commission they first of all sent a deputation to Mr. Gore requesting him to appoint a general meeting for the purpose of considering the subject, and in consequence there was a general meeting which was attended by about 20 of the Crown lessees, at that meeting it was determined as they had got a good deal to say upon the subject, that instead of their attending here indivially and giving you a great deal of trouble, it would be better that they should unanimously appoint Mr. Norton to represent them, and therefore all I do is merely to attend here on behalf of the Crown to answer any questions that the Commissioners may wish to put as regards the Crown property ; but as regards the subject of the immediate damage that is likely to be done to the Crown tenants, who most of them hold very long leases, Mr. Norton will speak.

1898. Then, perhaps, we had better hear Mr. Norton's statement first ?

Mr. Norton.—As it regards any statement that I may make at the present moment, I must say that I am not quite aware what the actual course to be adopted is. I do not exactly know how it is intended to carry the embankment, or what is proposed to be done. The object of my attending is rather this : to state that any road or footpath on the river front of this property would be very injurious to the interests of the lessees, and I think it would involve a very considerable expense to the public ; because if the injury is such as I believe it will be, being the property of a very valuable description, it will require very serious consideration whether it may not be avoided. There are means, I am told, of avoiding it ; but I do not now propose to go into that, I rather appear for the purpose of just explaining that any road or footpath along the front of that property would be most injurious to the lessees, and would involve great expense to the public.

1899. Do you consider that any property reclaimed there by means of an embankment, for the purpose of improving the navigation of the river should be given up to the lessees ?—At this moment I do not know what plan the Commissioners have selected.

1900. You are speaking of the property from A to C upon the large plan before you?—Exactly. Anything which ran directly in front of that property would affect it very seriously.

1901. Do you consider that the embankment itself alone would injure the property?—No; I do not think that the embankment would injure the property, but I think that a road or footpath in front of the property would. It appears to me that there might be a mode of obviating that difficulty by putting the road itself in a different position.

1902. What position would you suggest?—I have not gone seriously into that, but there are plans which I think might be suggested for that purpose.

1903. Most of the plans we have had submitted to us place the road, except in parts of the line, along the edge of the property?—That, I think, would be very injurious to the interests of the lessees. It would be impossible to say what the extent of the injury would be, because if injurious at all, the value of this property is so great as to make it almost impossible to tell you what the amount of the injury would be. For instance, the Duke of Buccleugh is building a house now at a cost of something like 100,000*l.*, and if it were made no longer fit for a nobleman's residence I can hardly tell you what it must cost to compensate for the injury.

1904. Do you think that the existence of a road at a certain distance from the house, as far as the present road is on the north side, would be so injurious as to unfit it for a nobleman's residence?—I think that a road placed as these plans indicate would entirely destroy that privacy which forms the chief enjoyment of the house. It would be very obviously injurious. As I said before I am speaking without any positive fact before me as to what the plan is—only assuming that such and such plans were likely to be carried into effect. If I knew exactly what the plan was I should be better able to speak to it.

1905. But you object generally to any plan that would provide for a road in front, whether the road be upon the same level or a lower level?—Yes.

1906. (*Captain Burstal.*) You said that the road might be carried in a different position, which might be less objectionable?—Yes; I think there would be a means of making an access to the main thoroughfare in a way that would not interfere with those interests so much as the plan proposed—you might get a road so as to avoid going in front of those houses which would be equally beneficial to the Public.

1907. (*Mr. Thwaites.*) Supposing a con siderable portion of the ground recovered from theriver were given up to the several proprietors, and that their gardens were extended 60 or 70 feet, would there then be any objection to the plan that is suggested?—I think there would still be great objection to a public road or a public footpath in any way, notwithstanding you gave them additional land.

1908. You are aware that at present any boatman can draw up his boat in front of that place and remain there, and that the Duke of Buccleuch, for example, has no power to remove him, but that boats and boatmen, and all that class of persons congregate immediately in front of those houses as things now stand. Do not you think that a roadway, under proper regulations, and removed a considerable distance from the end of the present gardens, would, in point of fact, be rather an improvement?—I do not think you could persuade the tenants that it would be an improvement to them; they would not like a public road. I think anything affecting that class of property must always depend upon a gentleman's own taste.

1909. But I was asking your opinion as distinct from that of the tenants, whether in your judgment it would not be better for the privacy of the tenants, and better for the property, to have a spacious roadway at some distance from the houses, with gardens intervening, than to be liable, as they are now, to be annoyed by having boats drawn up close to their houses?—I can hardly answer the question without knowing exactly the sort of thing that is proposed to be done, but if I could see the plan and explain to the different lessees what is proposed, I should be better able to ascertain their views and to answer the question.

1910. (*Captain Galton.*) Assume that the large plan which you see before you there is adopted, what would be your opinion upon that?—I have seen this plan before, and I still entertain the opinion that the road would be objectionable to the tenants, and seriously affect the value of the property.

1911. (*Mr. Thwaites.*) Do you take into consideration the fact that at present you have only mud banks in front of those houses at low water?—Yes.

1912. Do you not think that it would be a great improvement to get rid of those mud banks?—There is no doubt it would, as far as the mud banks are concerned. I do not hesitate to say that it would be a great improvement to take away the mud.

1913. You are perhaps aware of the opinion which was expressed by the Duke of Buccleuch in the House of Lords in the year 1848, when he made strong objections to those mud banks, and desired that steps might be made to remove them. Do not you think that the removal of those mud banks, accompanied with such an increase to his ground, would be a great improvement to the property?—There is no doubt that removing those mud banks would be a great improvement to the property; but I do not think it would do away the nuisance that might arise from a public road or a public footpath. I quite admit that an embankment simply would be a manifest improvement to the property.

1914. (*Captain Burstal.*) With respect to the inconveniences that the tenants of those houses suffered for example, in the year before last in particular, you are perhaps aware that some people said that the mud stank at low water. If that was the case it must manifestly have been a great nuisance to the inhabitants of these houses to have had that mud so close under their garden walls at low water?—Yes.

1915. Others who probably knew more about it, found that the worst stink in the river was at high water, when the tide came up and mixed itself with the river water and caused it to be very obnoxious. Now, that being so, as the river water at that time the year before last was nearly 300 feet closer to those residences than it would be if the embankment was made, does not it follow that if the river became impure again as it was before the annoyance to those houses would be much less than it was upon a former occasion?—No doubt of it. It comes back to what I said, that an embankment itself, without a public road or footpath would be an improvement; there is no doubt about that.

1916. (*Mr. M'Clean.*) Would you rather have no embankment at all than an embankment and a roadway?—I do not know that; I think it is very likely, the tenants would not object to an embankment only.

1917. (*Mr. Pennethorne.*) I think that the feeling of the Crown lessees would be this,—that they would much rather be let alone just as they are; but as there is a great work to be carried out, and as the embankment of the river is a matter of very great public importance, they would be very sorry indeed to appear in any way to oppose the embankment; they would not like to be placed in that position from which a gentleman recoils, to be opposing a great public improvement; that would be very unpleasant to them.

1918. (*Capt. Burstal.*) What is it that would make the embankment of the Thames a great improvement?—If I understand rightly the objects of the proposed embankment of the Thames, it is undertaken for three special purposes. It is undertaken for the improvement of the river; for the improvement of the traffic from east to west, through the crowded streets; and also to enable you to build a sewer upon the low level. These I understand to be the three purposes for which it is proposed to be undertaken.

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1919. (*Mr. Thwaites.*) You have omitted the sanitary point of view ?—I think the embankment of the river includes the sanitary point of view ; it is to remove the mud banks, and it is also to clear the river. I think those objects included in the sanitary view. Then, to speak more particularly of the ground in front of the Crown property, the embankment is not required there for the purpose of making a communication from east to west, nor for the sewer ; only for the improvement of the river.

1920. How would you get rid of the mud banks ?—As to that, first of all I should observe that in this particular locality the mud banks are not what they were ; the mud is very far less than it was some years ago ; there is not the same quantity of mud that there used to be, and probably in another 20 years it will have disappeared entirely; the gravel is rising close against the wall and the mud is disappearing, and the nuisance is not very great from the banks in front of this property.

1921. (*Capt. Burstal.*) Is there not a great quantity of mud off Fife House still ?—Very little indeed off Fife House ; there is opposite to Whit hall Stairs.

1922. (*Mr. Thwaites to Mr. Norton.*) What you would desire would be, that the whole of the ground recovered from the river should be given up to the different houses fronting the river, and that the road hould stop short at Whitehall ?—If the road could be constructed so as to stop short and to come into the main street there, I should prefer that certainly.

1923. (*Capt. Burstal.*) How would that relieve the traffic at this end of London ?—The traffic would be relieved more by a road going directly in that position than by a road coming at right angles, as it does now.

Mr. Pennethorne. I feel a little difficulty in submitting any plan, because we come here merely to say this, that we object to the road going between this property and the river, and we think we can show that if you take it in another direction it will afford more convenience to the public, and you will avoid the great expense which would attend forming the road on the embankment.

1924. (*Captain Galton.*) You would propose to take the road through Whitehall Yard, and to remove Lord Carrington's house, and to remove the two blocks of houses on each side of Parliament Street ?—Yes.

1925. Have you any idea of the value of Lord Carrington's house ?—I am not prepared to enter into the figures.

1926. But it is rather a question of figures, is not it ?—That would be a question for the Commissioners to take other opinions upon. According to most of the plans in this room it is proposed to form the road along the river side ; to come up an ascent, and to land close upon the foot of the bridge ; therefore any traffic going westward to Millbank or Pimlico and coming to that point will then have to go down again. If you bring the road out upon the bridge at this point you not only come in at right angles to the traffic, but in the reverse way you are also taking all the traffic from Great George Street, from Victoria Street, and from Millbank, up towards the Bridge, for it there to turn at right angles into the new embankment road. Those, I think, are objections to a road in that position. And for this reason I think it would afford much more convenience to the public if you were to take the road either through Whitehall Yard, bringing it out in the broad part of Whitehall, or in some other direction; provided always that Parliament Street is made so wide as to enable it to receive the additional traffic. Then all the traffic going eastward from the streets named would find its way out to the embankment without going up to the Bridge ; none of the traffic would ever want to go from the bridge to the embankment, not 1 in 100 would go that way. Then with regard to the expense of widening Parliament Street, of course it would be a great expense. I cannot tell you what it would be—I suppose, at least, 200,000*l.*

1927. Would it not be nearer 400,000*l.* ?—No ; 200,000*l.*, I think, is nearer than 400,000*l.*

1928. Would it be nearer than 300,000*l.* ?—Nearer than 300,000*l.* With regard to Parliament Street, I think there is no doubt that the first block of buildings at the north end of Parliament Street, which may be of the value say of 75,000*l.*, ought to be pulled down, and will be pulled down sooner or later, simply for the public offices. One principal front of the new offices is to be in King Street. Now it is not likely that the principal front of one of the largest buildings in London will be left in a street like that, and therefore, no doubt, it must of necessity lead to the pulling down of that block of buildings; I do not think the cost of removing that block of buildings should be taken much into consideration with reference to this question, because it must be done sooner or later ; and I should say the same of the other block. I apprehend that even if the other block should not be required for any public buildings, yet the traffic of Parliament Street is so increasing, that sooner or later the Metropolitan Board of Works must take that block down also. So that in fact, by including the widening of Parliament Street in your present scheme, you would be only including that which will certainly have to be done sooner or later. Therefore, I say, that to carry the road away from the river, and to bring it out in Whitehall Yard or in Parliament Street, would be much better than taking it along by the river side. Then I think I may probably go a little further with respect to this property more particularly. In this part of the river all the ground recovered from the river belongs to the Crown. In other parts of the river they are only entitled to one third. Now my impression is that the Crown tenants would be so anxious not to interfere in any way with the embankment of the Thames, that I think the Crown would be quite willing to undertake at its own cost, to execute the embankment in the front of the property, upon the understanding that the tenants would pay them a very small per-centage upon the cost on account of their being secured from the nuisance. I think the probability is that if any plan were adopted, which turned the traffic away from the front of this property, the Crown would be willing to embank a very considerable portion between Hungerford Bridge and Westminster Bridge.

1929. (*Mr. Thwaites.*) Can you give us any idea as to the probable time in which the first of those two blocks of property which you have pointed out will be removed ?—I could not possibly say that, because first of all it will depend upon Parliament, it will depend upon the Government, upon building the public offices, and other things. All I say is that it is impossible to have a great and ornamental building with its principal façade in King Street without the houses in Parliament Street directly in front of it being taken down.

1930. Is not it in contemplation to take both those blocks ?—No, the northern block was included in the deposited plans, and a proposal was made for taking the money for it, but that block was struck out of the Bill some three or four years ago, so that at present the Government have no power to buy it.

1931. Does your estimate of 200,000*l.*, refer to the larger block or to both ?—I think that what I said, without giving any estimate, was this, that one block might possibly cost 75,000*l.*, and the two together 200,000*l.* And then again you have to remember that if you take the road on the embankment in front of this property you have not only the cost of the ground and the cost of the embankment, but you have to compensate the Crown tenants.

1932. Supposing they can make out an injury ?—I have no doubt but that they would sustain great injury.

1933. I understood you to say that without pledging the Government, you express your belief that, supposing the Commissioners were to take your view of the case and to carry the road out from the embankment through Whitehall Yard, the Crown

would not be unwilling to embank the river in front of its property, giving the land recovered from the river to the different tenants of the Crown and making a private bargain with the tenants ?—I am not authorized to say that, but I have no doubt that such would be the feeling of the Commissioners, and that they would be willing to do so, if it could be arranged.

1934. Then we may understand that, with the exception of the proposed roadway in front, you are of opinion that an embankment at that point would be of great benefit to the property ?—No, I do not say that ; I say that the embankment of the river altogether is a great benefit to the public. What I meant to say was this, that I think the Crown tenants would much rather be let alone, I think they would much rather have the private enjoyment of their houses than have the ground extended, but that they do not wish to stand in the way of this great public improvement, they would rather do it at their own cost than stand in the way of a great public improvement. All that they wish is, that there should not be any traffic of any kind, either omnibuses or carriages, or foot traffic, between them and the river, to destroy what is now the greates enjoyment of their houses, their extreme privacy.

1935. (*Mr. M'Clean.*) Would you prefer a railway to a road ?—No, certainly not.

1936. (*Captain Galton.*) Would not a railway afford greater privacy than a road ?—No ; I do not know how you are to have gardens over a railway. I have not looked much at those plans, but on the plan I looked at I found a station close between these houses and the bridge, and the station would of course be a very great nuisance. For anything of that sort you would have to buy up the land from the Crown, because any land you recover from the river there belongs to the Crown. By diverting the road as we propose you avoid the cost of buying up that property from the Crown and compensating the Crown tenants.

1937. Supposing that plan were adopted would you recommend to the Crown that on account of the additional land that they would acquire and the improvement of the property that would result, they should give the land and the houses necessary for making the road through Whitehall Yard ?—Certainly not, because to carry the road through Whitehall Yard it would be necessary to pull down several houses ; that would become a question of account.

1938. To whom would those appropriate sites for buildings belong ?—I think the Crown would be quite willing to enter into a negotiation, and that they would do all the embankment to that part from their own boundary, but of course they could not buy up their tenants' interests nor sacrifice their own in the houses that would be necessary for making the road. There is Fife House, Lord Carrington's house, the Army and Navy Museum, and several other buildings to be pulled down,—they could not undertake to buy them and convert them into vacant ground without compensation ; but that compensation I expect would be found to cost the public much less than taking the road the other way.

1939. There would be compensation required in purchasing these other blocks of buildings in Parliament Street ?—Yes, of course ; but then a widened road through Parliament Street would be of so much greater public benefit than a road by the river side that it is worth a great deal more money. I do not think the river side would be convenient, or that it would be right to bring out the general traffic from the city just at the foot of the bridge.

1940. (*Mr. Thwaites.*) You think that of the traffic coming over the bridge not one person in one hundred would pass along the embankment ?—No ; the traffic that comes over the bridge wants to go by Charing Cross to the western or north-western parts of London, and would go along Parliament Street, not along theembankment.

1941. (*Sir Joshua Jebb.*) Is there not very considerable inconvenience arising from the narrowness of that part of Charing Cross extending from Drummond's bank to the Admiralty ?—Yes ; but that traffic would be very much diminished by the embankment road, because a great part of the traffic wkich now goes up along that narrow part and then turns into the Strand would turn from Parliament Street to the embankment.

1942. But all that traffic that goes to the north-west of London would still go along Charing Cross ?—All going to the north or to the west of Charing Cross would still go that way, but all going to the city from Pimlico and the Houses of Parliament would take the embankment road.

1943. Has any plan ever occurred to you for relieving the traffic at that point ?—I cannot say that I have thought much upon the subject, though I have been aware of the difficulty ; I do not think anything can be done to improve that part without an expense far beyond what it is worth. Merely to make it a few feet wider will cost such a sum of money that it would scarcely be worth while to undertake it.

1944. Do not you think that a great deal of that traffic might be taken by a new street from Charing Cross in connexion with a bridge across the river ?—That was a plan I proposed many years ago. At that time it was called the Southwark Improvement.

1945. Do you not think that would be an admirable plan ?—I thought it would be a matter of great consequence to have a road from Charing Cross across Hungerford bridge through Southwark to the Borough and London Bridge Station.

1946. (*Captain Burstal.*) Would that be necessary under the present circumstances if there was to be a road along the proposed embankment ?—I look upon it as a totally distinct question from Embankment, but I think the formation of the Embankment would very much lessen the necessity for such a communication from east to west.

1947. (*Captain Galton.*) Have the leases to the Crown tenants been altered since the plan you have produced was drawn ?—I think there has been only one change—the Duke of Buccleuch's. Some of the leases will expire in the year 1864 and one in the year 1870 ; the Duke of Buccleuch's has been extended for 99 years.

1948. (*Captain Burstal.*) When the designs for the public offices were made which were shown in Westminster Hall, was not it provided that the two blocks of building on the north and south sides of Parliament Street should be taken away ?—Yes. Those plans are quite done away with ; the buildings now intended to be erected are to extend only as far as Charles Street.

1949. That will necessitate the removal of the northern block of buildings ?—I think so. I think there is no chance of that block being allowed to stand.

1950. (*Chairman.*) I presume that those buildings which stand between the new public offices and Parliament Street will be taken down by means of a grant from Parliament, because it may be considered as part of a great public operation ?—I cannot say what will be done or what the House of Commons will do, but it would appear reasonable that they should be taken down by a grant from Parliament. If the public offices are to be built according to the plans at present adopted, that block of buildings must I think, of necessity be taken down.

1951. If there is a necessity for taking that block of buildings in order to carry out the erection of public offices then, no doubt, the cost will be defrayed out of the national resources ; but if the other block of buildings is to be taken down because it impedes the public traffic that will not be considered as coming into the same category, and Parliament would probably do as it has done recently, set its face against any local improvement being paid for out of the national resources ?—Exactly ; such would be

Mr. J. Pennethorne and Mr. D. Norton.

24 June 1861.

my feeling. What would be done I cannot know, but I think that it would be quite right and reasonable that one block should be paid for by Parliament, and the other block out of the metropolitan funds.

1952. Then that would involve the necessity of considering whether in recommending that block of buildings to be taken down in order to carry the public along the line you have indicated, and at the same time to relieve in that manner the Crown estate, we should be fulfilling the commands of the Commission to report upon the most economical means of carrying into effect the embankment of the Thames? —It would be a question of comparison. My own impression is that you would obtain many more advantages as regards the public traffic, by taking those blocks of buildings and forming the road through Whitehall Yard. You would avoid the cost of executing the embankment and compensating the Crown tenants along the river side which would render the cost of one line about equivalent to the other. By economy I should not understand that which is cheapest in itself, but that which affords the greatest advantages at the least comparative cost.

1953. That is because you assume, that in executing this great public improvement the Crown would be entitled to be paid for that which now forms a mud bank?—I assume two things; first that the Crown tenants by the river's side would be entitled to have compensation for their present interests; and next I assume, that if you appropriate the Crown property, now the bed of the river, for any purpose, you would have to pay the Crown for it.

1954. But when it is desired to effect a great public improvement in the most economical and efficient manner, are you of opinion that if any part of the bed of the river is to be reclaimed for that purpose the Crown would insist upon being paid for it?—The representatives of the Crown have no option on the subject, the Crown is entitled to all the ground that is recovered in front of the Crown property, and to one third of the value of whatever is recovered in other parts. Of course they would consider themselves compelled to require whatever is given by Act of Parliament; at the time the Act was passed they considered the Crown entitled to a great deal more; but a compromise was made at that time which gave them all in front of the Crown property and one third of the rest, and they must consider themselves entitled to all that the Act of Parliament gave.

1955. But when a great public work is to be executed for the purpose of supplying an important public want, by the appropriation of a mud bank now lying waste, do you think it certain that the Crown would insist on any such right?—My answer to that is, that the Crown is totally distinct from the public, and as this is Crown property, not public property, it would not be right to apply it to public purposes without compensating the Crown.

1956. With respect to the case of the Crown tenants, suppose the Crown thought fit to build upon the river front of Montagu House, what remedy would the lessee of Montagu House have against the Crown?—I do not think the crown has power to do so as long as the lease lasts; the lease comprises all the enjoyments and advantages of the house, of which the river front is one of the principal. The lessee of Montagu House has the right of landing from the river, and there are steps down to the river for the enjoyment of the house, and every enjoyment the river affords the lessee is entitled to. It would be impossible that the crown could ever build upon that ground during the lease.

1957. In the case of some other ground not in front of the houses belonging to the Crown, supposing the public were to pay for the ground in front of the Temple Gardens, and to rear a structure along the front of the Temple Gardens, what legal remedy would the Temple have according to law?—As regards that question I should say that it is sufficient for the Crown to look to their own property, and as regards their own property they certainly would not think of building in front of it.

1958. The plan which you have recommended would involve the expenditure of a very large sum of money in order to avoid making a road in front of the Crown property?—I do not put it in that way. I say, although it is a large sum of money, it is not for the purpose altogether of avoiding carrying a road in front of the Crown property, but also because the road through Parliament Street would be a much greater public improvement. It would be much more to the advantage of the public for the road to go into Parliament Street than on to the bridge.

1959. You are aware that the road as you have drawn it is of great breadth, that the road over Westminster Bridge and leading to the Bridge is shown by your plan to be 80 feet wide?—Yes.

1960. You also show the existing line of houses in Bridge Street standing a little back from the parapet of the bridge. Do you consider there would be any difficulty under those circumstances in dividing the traffic, and letting part of it come on to the embankment?—Yes; I think there would be great difficulty, for this reason: that traffic coming from Victoria Street and Millbank, towards the bridge, would have to cross the traffic from the bridge, which would create stoppages, and that great evil would be avoided if you take the traffic from the Pimlico station along Victoria Road straight up to Charing Cross without going near the bridge.

1961. But you do not imagine that there would be any sort of difficulty in the traffic in a street where the street is 80 feet wide?—Yes, I do; and I conceive that the object should be to make the improvement as perfect as it can be made, and that it would not be done perfectly if new traffic were brought on to the approach to the bridge, to meet and to cross the traffic coming over it.

The witnesses withdrew.

Adjourned.

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THAMES EMBANKMENT COMMISSION,
1861.

PALL MALL

REPORT

OF

THE COMMISSIONERS

APPOINTED TO EXAMINE INTO

PLANS FOR EMBANKING THE RIVER THAMES WITHIN THE METROPOLIS.

WITH

PLAN AND APPENDICES.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
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1861.

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REPORT.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

We, the undersigned members of Your Majesty's Commission,—appointed to examine into plans for embanking the River Thames within the Metropolis, so as to "provide "with the greatest efficiency and economy for the relief of the most crowded streets, by "the establishment of a new and spacious thoroughfare, for the improvement of the "navigation of the river, and which will afford an opportunity of making the low level "sewer without disturbing the Strand or Fleet Street, and also to report upon the cost "and means of carrying the same into execution,"—now humbly submit to Your Majesty the conclusions at which we have arrived, and the recommendations we have agreed to offer.

2. The nature of the inquiry entrusted to us was made known to the public by advertisement in the newspapers, and more than fifty designs were presented for our consideration. A short description of each is given in Appendix A., and the authors and other persons interested have had the opportunity of publicly explaining and illustrating their respective views upon the subject. The evidence given by the parties will be found in Appendix B.

3. The main features of the majority of the plans are an embanked roadway on the north side of the river, and the formation of docks with the view to retain all the existing wharves; in others, railways in addition to the roadway and docks have been proposed; whilst in a few, a solid embankment and roadway without either docks or railways have been suggested. Amongst these latter is a plan submitted by Mr. Sheilds, some of whose suggestions appear to us to afford in a greater degree than any of the other designs, the basis upon which an efficient and economical scheme may be founded. We desire, however, to express our high appreciation of the great engineering skill and ability that has been displayed in many of those designs which contemplated the construction of docks and railways.

4. The wharf property between Westminster Bridge and the Temple Gardens is for the most part devoted to the coal trade. We find that great facilities are now afforded for the distribution of coal by the new system of unshipping in the docks into railway waggons, and by various depôts on the railways in and near the metropolis. We are of opinion that public convenience no longer necessitates the continuance either of the coal or any other trade in this immediate locality. We, therefore, think that it would not be expedient to construct and maintain docks for the sake of preserving the existing wharves between the points we have mentioned; whilst their removal will greatly simplify the formation of the embankment, and add to the beauty of the river. The wharf property, however, between the Temple Gardens and Blackfriars Bridge cannot in our opinion be so treated; and that eastward of Blackfriars Bridge is so important in a commercial point of view, that we do not recommend any interference with it.

5. Having regard to these and other considerations, we are of opinion that we shall best fulfil Your Majesty's instructions and provide for the requirements of the public, by establishing a spacious thoroughfare between Westminster Bridge and Blackfriars Bridge, by means of an embankment and roadway; and that the new thoroughfare thus created should be continued on eastward from Blackfriars Bridge by a new street, according to the line formerly laid down by Mr. Bunning, the City's Architect, from the west end of Earl Street across Cannon Street, to the Mansion House. Without such a street no relief whatever would be given to the crowded thoroughfares of Ludgate Hill, St. Paul's Churchyard, and Cheapside.

6. The line of embankment at Westminster would coincide with the terrace of the Houses of Parliament, and from thence to Blackfriars Bridge would nearly follow the line laid down for the Corporation of the City of London in 1841 by Mr. Walker,

Captain Bullock, Mr. Saunders, and Mr. Leach. The general level of the embankment and road would be four feet above Trinity high water. The road would commence at Westminster by an easy descent opposite the Clock Tower, and be continued on, 100 feet in width, to the eastern boundary of the Temple Gardens; from this point the road would be reduced to 70 feet in width, and carried on a viaduct supported by piers of masonry, rising to the level of Blackfriars Bridge, so constructed as to leave a breadth of water for the convenience of the City Gasworks and the adjoining wharves of about 70 or 80 feet. The spaces between the piers under the ascending road would be left available for barges to lie, and afford easy access to the water between this structure and the wharves.

7. From Westminster Bridge to the eastern boundary of the Temple Gardens the embankment—sustained by a river wall—would be solid in its whole breadth; which breadth opposite Richmond Terrace would be 220 feet from the existing river wall. At Hungerford it would be 320 feet from the existing wharf; at Somerset House about 120 feet; and at the Temple about 220 feet. The plan accompanying this Report sets forth the entire scheme.

8. With respect to the appropriation of the reclaimed land, we would recommend that so much of it as shall be in front of the Crown property—which will be about 120 feet in width in its narrowest part—should be laid out in ornamental gardens for the accommodation of the occupiers of the houses, and that the portion in front of the Temple Gardens, also about 120 feet wide, be placed at the disposal of the Society to be dealt with in a similar manner. The other portions of the reclaimed land may either be kept open for the health and recreation of the public, or be applied to building purposes.

9. We propose that communications should be made with the intended roadway from Whitehall, opposite the Horse Guards, and also from some of the streets in the Strand:—and that a new street should be formed passing through the Savoy to Wellington Street. The frontages on these streets would offer eligible sites for building, as would also the inner frontage of the new road, if it should hereafter be thought fit so to utilize the ground. We, however, feel it our duty to recommend that while economy and utility in laying out and disposing of the ground should be kept in view, endeavours should be made to invest this new and conspicuous work with some elements of interest and beauty.

10. For the improvement of the navigation we recommend that the existing shoals between Waterloo and Westminster Bridges should be removed, due regard being had to the foundations of the former. Also that an uniform low-water channel of six feet in depth at ordinary spring tides, and 500 feet in width from the embankment wall, be secured, and thus the stream be more equalized in velocity. If at any future time any effect should be produced on the river from the diminution of its capacity for tidal water by reason of the embankment, arrangements may be made higher up the river by dredging, or by a tidal reservoir to compensate for the loss. The consideration, however, of this matter would naturally devolve on the Conservators of the River Thames.

11. The embankment and street we have proposed will afford an opportunity of making the low level sewer without disturbing the Strand or Fleet Street, and at the same time facilitate the construction of the sewer eastward of the embankment.

12. We are not prepared to recommend the construction of an embankment on the Surrey shore at present, but if hereafter it should be thought desirable or necessary to embank any portion of it, the scheme we have proposed for the Middlesex side will not in any way interfere with it.

13. With regard to that part of our instructions in which we are commanded by Your Majesty to "report on the costs and means of carrying the same into execution," we beg to report that we estimate the cost of the land, making compensations, constructing the embankment and roadways, and also acquiring the property in the City for, and forming the new street to the Mansion House, at 1,500,000*l.* This amount, however, would be reduced should it be thought right to dispose of any of the reclaimed land on the bank of the river for building purposes.

14. Parliament having appropriated the coal dues to provide for the outlay necessary for this great work, it only remains for us to express our opinion as to the "means of "carrying the same into execution."

15. Looking at the magnitude of the work, the important and varied interests, both public and private, which will be affected—and the urgent necessity for its early completion—we are of opinion, that the control and management of the undertaking should be entrusted to a special Commission, appointed by Your Majesty, in order to ensure the speedy and economical attainment of an object, so much needed by the public, and affording so favourable an opportunity for the improvement of the river and adornment of the Metropolis.

All which we humbly report to Your Majesty.

Witness our hands and seals, this Twenty-second day of July 1861.

WILLIAM CUBITT.	(L.S.)
JOSHUA JEBB.	(L.S.)
DOUGLAS GALTON.	(L.S.)
EDW$^{D.}$ BURSTAL.	(L.S.)
HENRY A. HUNT.	(L.S.)
JOHN ROBINSON M'CLEAN.	(L.S.)

HENRY KINGSCOTE,
Secretary.

PROTEST BY JOHN THWAITES, ESQ.

Spring Gardens, S. W.,
23rd July 1861.

MY LORD MAYOR,

WHILE agreeing with the Report of my Brother Commissioners as to the line of embankment to be followed, and the general principles laid down for its construction, I regret to be compelled to protest against certain conclusions at which they have arrived, and am most unwilling to allow any individual difference of opinion to disturb that unanimity which is so desirable in the decisions of a body charged with the preliminary investigation of a work of the highest public importance. But to remain silent in the face of the final recommendation of the Report would, I cannot but feel, be to betray as well the interests of the general metropolitan public as those of the Board which I have the honour to represent on the Commission.

If there be one point which has been affirmed and re-affirmed with unmistakeable precision by every one of the several Commissions and Committees which have investigated this subject, it is, that the Metropolitan Board of Works is the proper authority for the construction of the Thames Embankment.

In the year 1855, previously to the passing of the Metropolis Local Management Act, the Select Committee of the House of Commons on metropolitan communications, among the foremost of which they placed a Thames Embankment, reported their opinion, "That until some authority is established in the Metropolis sufficiently comprehensive to give effect to improvements in the communication, laid down on a scale adequate to the existing and prospective wants of the traffic, little can be done by the interposition of the Legislature in this matter. They therefore desire to express their satisfaction at the prospect of a Metropolitan Board of Works being shortly established with power to carry out those changes which the existing state of London renders it impossible much longer to postpone."

In 1858 Parliament authorized the Metropolitan Board of Works, for the purposes of the main drainage, "to construct any work through, along, over, or under the bed and soil and banks and shores of the river Thames, making compensation to all persons having any interest in any wharves, jetties, or other property damaged by such works;" and in 1860 the Select Committee on Thames Embankment reported "that the Legislature

" having already entrusted to the Metropolitan Board of Works the main drainage of " the metropolis, and armed them with powers to deal with the foreshore of the river in " connexion therewith, they recommend that the construction of the embankment be " also confided to them." I might quote the recorded opinion of members on both sides of the House, as well as that expressed by your Lordship from the chair at the outset of the present inquiry, confirmatory of my proposition, which, even unsupported by the overwhelming evidence I have adduced, might be suffered to rest on the simple constitutional principle of the mutual relation of taxation and representation. I am aware of no single instance of a case in which the expenditure of funds derived wholly from local sources has been controlled either by Her Majesty's Government or by any other independent body.

The Legislature having, after very mature deliberation, constituted a Board of Works for the Metropolis, and to them confided the improvements thereof, and having, by the Bill which has just received the Royal Assent, set apart certain dues, raised wholly within the Metropolitan Police District, for the purpose of a Thames Embankment, it would, I contend, be diametrically opposed to the whole course of our legislative system, as well as to the repeatedly-expressed intention of Parliament, to confide the execution of this work to a Crown-appointed Commission having no local connexion whatever, and being in no way responsible either to Parliament or to the ratepayers for the expenditure of funds, to which not one farthing has been contributed by the Imperial exchequer, but which have been derived solely from the unaided resources of the already heavily-taxed inhabitants of a very limited area.

Indeed, upon a consideration of a far more extensive, more difficult, and more important work, I mean the main drainage of the Metropolis, the Legislature saw fit to emancipate the Board from all control on the part of Her Majesty's Government, while the Committee of last year, with the the experience of the Board's past proceedings before them, resolved unanimously that the construction of the Thames Embankment be confided to the Metropolitan Board of Works, feeling, as I have every reason to believe, that the manner in which the Board and their officers have designed and partially completed this vast undertaking has fully justified that further confidence which they recommend should be placed in them. With the Report of that Committee before them, demonstrating the intimate connexion between the embankment and the low level sewer, neither of which can be constructed independently of the other, I am at a loss to conceive how the members of the present Commission can propose to entrust the execution of the one to a body wholly independent of that to which the Legislature has already confided the execution of the other. I cannot but believe that these arguments would have weighed with yourself, as well as with the other members of the Commission ; and must reiterate my regret that a matter so deeply affecting the Board I represent should have been discussed and determined in my absence, and without any notice of an intention even to submit such a point for consideration.

I have treated the question raised in the last paragraph of the Report in the first place, because of the magnitude of the interests involved, but there are two other heads on which I differ from my colleagues.

I cannot but consider it inexpedient to single out any one among the eminent engineers who have given evidence for favourable mention to the exclusion of the rest. There were other plans, which, in my opinion, presented points of agreement with the views of the Commission equally worthy of mention with that selected, and I consider that justice demands that the Commission should either state which among them deserve to be cited for originality of suggestion, or ingenuity of construction, or that they should abstain from naming any one in particular in their Report. Moreover, the suggestion of a solid embankment is by no means of such striking novelty as to merit special commendation, seeing that it forms an essential part of Mr. Walker's plan of 1840.

I desire also to record my protest against the omission of the southern embankment from the recommendations of the Report. I am aware of a difference of opinion among competent authorities as to the effect of a northern embankment on the south side, and fully concur in the prior necessity of the northern work, both as a means of communication and as inseparable from the construction of the northern low level sewer, but agree with the Committee of last year in considering the embankment of the south side as a necessary part of any complete scheme for the improvement of the river and the Metropolis. I think, also, that as the numerous and extensive industrial establishments in Lambeth and Southwark will, by means of the coal tax, be largely contributory to this work, that the claim of these boroughs upon the consideration of the Commissioners

ought not to be ignored, and an estimate for a southern embankment should, in my opinion, appear in the Report.

I have to request that this protest may be minuted, and a copy appended to the Report.

I have the honour to be,
My Lord Mayor,
Your obedient Servant,
J. Thwaites,
Chairman, Metropolitan Board of Works.

To The Right Honourable the Lord Mayor,
Chairman of the Thames Embankment
Commission.

ANSWER TO THE ABOVE BY THE CHAIRMAN OF THE COMMISSION.

Thames Embankment Commission,
2, Victoria Street, S.W.,
25th July 1861.

Dear Sir,

Had your protest been a simple exposition of your views on the instructions of the Commissioners as to the "means of carrying the embankment into execution," it would have been appended to the Report without comment from the Commission; but as you state your "regret that a matter so deeply affecting the Board I represent should "have been discussed and determined in my absence, and without any notice of an "intention, even to submit such a point for consideration," I am instructed to remind you that the subject was discussed and determined on in your presence.

The Commissioners met on the 10th of July, specially summoned, to consider the Report. It was then, with various suggestions, committed to myself for collation and revision,—was reprinted,—circulated among the Commissioners on the 13th for consideration of the additions and amendments,—and finally considered at the meeting on the 16th. At both of these meetings the Commissioners had the benefit of your presence. At the meeting on the 16th the paragraph in question was first discussed; to that paragraph you stated your objections, but in which the Commissioners did not concur.

With respect to another paragraph of the protest, wherein you say, "I cannot but "consider it inexpedient to single out any one among the eminent engineers who have "given evidence for favourable mention to the exclusion of the rest," the Commissioners consider that Mr. Sheild's plan was, in some points, so like the one they have agreed to recommend, that they could not in justice to him pass it by without some mention.

With respect to the third point mentioned in your protest, wherein you say that "I "desire also to record my protest against the omission of the southern embankment "from the recommendations of the Report," I am instructed to bring to your recollection that you were present at the whole discussion of this point, and appeared to coincide with the paragraph which now stands in the Report.

I have to inform you that your protest and this letter will both appear following the Report.

Yours faithfully,
(Signed) William Cubitt.

John Thwaites, Esq.,
&c. &c.
Spring Gardens.